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FOR 1941-1943

EDITED FOR THE TRUSTEES BY
MILLAR BURROWS AND E. A. SPEISER

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THE EXCAVATION OF TELL BEIT MIRSIM

(Joint Expedition of the Pittsburgh-Xenia Theological Seminary and the
American School of Oriental Research in Jerusalem)

VOL. III THE IRON AGE

WILLIAM FOXWELL ALBRIGHT

WITH A CHAPTER BY

JAMES LEON KELSO

AND

J. PALIN THORLEY

TO MY STUDENTS

ABRAHAM JOSEPH SACHS

AND

GEORGE ERNEST WRIGHT

WHO HAVE TAUGHT ME MANY THINGS BOTH

PHILOLOGICAL AND ARCHAEOLOGICAL

IN GRATITUDE

PREFACE

This volume brings the publication of the results of the first four campaigns of excavation at Tell Beit Mirsim to a close, seventeen years after the beginning of our first campaign in 1926, and more than a decade after the close of our fourth campaign. This delay has been very advantageous in some respects, since it has made it possible to utilize the results of other excavations, thus consolidating our own interpretation of the finds. In principle, however, such delay is unfortunate, and we apologize for it. Engraving began in July, 1942, before the text was finished, so there are a few irregularities in the plates, to which attention is duly called in captions and text. A rather elaborate index to the four parts of the Tell Beit Mirsim publication has been included, thus materially increasing the usefulness of the publication as a whole. Though we have by no means given up our long-cherished hope of a fifth and perhaps a sixth campaign at the site, in order to clarify obscure points and round out the picture, the publication is accordingly brought to a temporary close.

Again we want to thank all the collaborators, contributors and officials who have made the Tell Beit Mirsim excavation and its publication possible. In our earlier prefaces (Vol. I, pp. xiii-xv; IA, pp. 55 f.; II, pp. xv f.) we have thanked our many friends and assistants at length. To Dr. M. G. Kyle, who died just a decade ago, we again pay our tribute of affection and gratitude; it was his interest and zeal which made the excavation possible. To the late Dr. Clarence S. Fisher, who passed on to us the archaeological methods of the Reisner-Fisher school, we owe another debt of gratitude. Our excavations may have lacked the elaborate equipment of Reisner's and Fisher's own expeditions, but we endeavored to make up in attention to detail and circumspection in hypothesis what we lacked materially. The generous collaboration of young scholars like Drs. J. L. Kelso and Nelson Glueck, together with a score of others, whose names we have listed in preliminary reports and earlier volumes of the definitive publication, made it possible to take care of photography, drawing, recording, sorting sherds, etc., etc. Through the good offices of Dr. Fisher we were able to avail ourselves of the services of trained Egyptian surveyors—especially of William Gad—and foremen, who were of inestimable help to us during the three latter campaigns. Mr. A. H. Detweiler, who has since become known as a historian of architecture, aided us notably during the fourth campaign. Photography was taken care of largely by Dr. Aage

Schmidt and (in the fourth campaign) by Dr. W. F. Stinespring. Drawings of pottery were made by so many members of the staff that it would be invidious to attempt to list them; all were carefully checked and rechecked. The drawings of objects herewith published were prepared by Messrs. Hanani and Pinkerfeld, Mr. Detweiler, Miss Muriel Bentwich and myself; the plates of pottery were nearly all traced, with scrupulous care for detail, by Dr. Dorothy Hill; several older plates by Mr. Hanani are also included. The plans of excavated areas have been reduced only half instead of three times as in TBM II, where the strictures of our reviewers were justified. My son Paul assisted with tracing and mounting of the plans.

To the successive directors of the Department of Antiquities in Palestine, Professor John Garstang and Mr. Ernest Richmond, as well as to the members of their staffs, we owe a lasting debt of gratitude. To our old friend, Père L. H. Vincent, we are under very great obligation for his never failing interest and advice, even when our conclusions ran counter to his own views. Professor C. C. McCown and Mr. J. Carson Wampler have given valuable information about the excavations at Tell en-Naşbeh, for which we thank them heartily.

The present volume has been in course of preparation for many years. Thanks to several small annual subventions from the research fund of the Johns Hopkins University and to one from the American Council of Learned Societies, it was possible to enlist assistants for part of the arduous task of organizing and classifying the materials, mounting plates, etc. Since nearly all of these grants, as well as two subventions from the American Schools of Oriental Research, came ultimately from the Rockefeller Foundation, it is an unusual pleasure to signalize the obligation which our undertaking, together with thousands of other scholarly projects, owes to the enlightened munificence of the great founder of this institution. Drs. G. Ernest Wright and A. J. Sachs, to whom I dedicate this volume as a slight token of respect and affection, proved to be invaluable assistants and critics. Mr. Cullen I. K. Story has been of the greatest service to me during the past year.

To President Millar Burrows of the Schools I wish again to express my hearty thanks for helpful cooperation. He and Dr. Wright have read the proofs of the book, contributing many valuable suggestions and corrections. The J. H. Furst Company has again earned our gratitude because of its attention to detail and its patience when printing is protracted.

We are particularly fortunate in being able to include the first publication of the important ceramic studies of Professors J. L. Kelso and J. Palin Thorley. Thanks to Dr. Thorley's unrivalled competence and to Dr. Kelso's patient examination of the T. B. M. material and experiments with it, we are able to present the first detailed technical analysis and evaluation of any pottery excavated in the Near East. Nothing comparable can be found in archaeological literature.

It is with a sense of nostalgia that the writer takes leave of the Tell Beit Mirsim project, from which he has never been far since 1926. Modest in its yield of museum pieces, chary of inscriptions, it has yet thrown disproportionate light on many hitherto obscure corners of Palestinian antiquity. It is not without satisfaction that we have seen our chronology confirmed almost throughout, even in detail, by subsequent discoveries, in spite of earlier criticisms from sources once considered authoritative.

THE AUTHOR

March, 1943

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LIST OF ABBREVIATIONS

AAA	<i>Annals of Archaeology and Anthropology</i> (Liverpool).
AJA	<i>American Journal of Archaeology</i> .
AJSL	<i>American Journal of Semitic Languages</i> .
AOB ²	Gressmann, <i>Altorientalische Bilder zum Alten Testament</i> , 2nd. ed., 1927.
AOF	<i>Archiv für Orientforschung</i> (Weidner).
APB	Albright, <i>The Archaeology of Palestine and the Bible</i> , 1932-35.
APEF	<i>Annual of the Palestine Exploration Fund</i> .
ARI	Albright, <i>Archaeology and the Religion of Israel</i> , 1942.
ASE	Grant (and Wright), <i>Ain Shems Excavations</i> , 1931-39.
ASP	Dalman, <i>Arbeit und Sitte in Palästina</i> .
BJPES	<i>Bulletin of the Jewish Palestine Exploration Society</i> .
BM	Bliss and Macalister, <i>Excavations in Palestine</i> .
BR, BRL	Galling, <i>Biblisches Reallexikon</i> .
BSG	Grant, <i>Beth Shemesh</i> , 1929.
<i>Bulletin</i>	<i>Bulletin of the American Schools of Oriental Research</i> .
BZ	Sellers, <i>The Citadel of Beth-zur</i> , Philadelphia, 1933.
CPP	Duncan, <i>Corpus of Palestinian Pottery</i> .
DP I	Watzinger, <i>Denkmäler Palästinas</i> , I, 1933.
E. B.	Early Bronze.
FCTB	Rowe, <i>The Four Canaanite Temples of Beth-shan</i> , Part I, 1940.
G	Macalister, <i>The Excavation of Gezer</i> , 1912.
<i>Gerar</i>	Petrie, <i>Gerar</i> , 1928.
ILN	<i>The Illustrated London News</i> .
J	Sellin and Watzinger, <i>Jericho</i> , 1913.
JBL	<i>Journal of Biblical Literature</i> .
JDAI	<i>Jahrbuch des Deutschen Archäologischen Instituts</i> .
JEA	<i>Journal of Egyptian Archaeology</i> .
JNES	<i>Journal of Near Eastern Studies</i> (continuing AJSL).
JPOS	<i>Journal of the Palestine Oriental Society</i> .
<i>Lachish II</i>	Tuffnell, Inge and Harding, <i>Lachish II: The Fosse Temple</i> , 1940.
L. B.	Late Bronze.
M I, II	Schumacher and Steuernagel, <i>Tell el-Mutesellim</i> , Vol. I; Watzinger, <i>Tell el-Mutesellim</i> , Vol. II.
MAB	Barrois, <i>Manuel d'archéologie biblique</i> , Vol. I, 1939.
M. B.	Middle Bronze.
Megiddo I	Lamon and Shipton, <i>Megiddo I: Seasons of 1925-34</i> , 1939.
MF	Fisher, <i>The Excavation of Armageddon</i> .
MRMC	May and Engberg, <i>Material Remains of the Megiddo Cult</i> , 1935.
MT	Guy and Engberg, <i>Megiddo Tombs</i> , 1938.
NMP	Shipton, <i>Notes on the Megiddo Pottery of Strata VI-XX</i> , 1939.
PEFQS	<i>Palestine Exploration Fund, Quarterly Statement</i> .

PEQ	<i>Palestine Exploration Quarterly</i> (continuing PEFQS).
PPEB	Wright, <i>The Pottery of Palestine from the Earliest Times to the End of the Early Bronze Age</i> , 1937.
QDAP	<i>Quarterly of the Department of Antiquities</i> (Palestine).
RB	<i>Revue Biblique</i> .
S. N. (SN)	Serial Number.
T. B. M.	Tell Beit Mirsim.
TBM	<i>The Excavation of Tell Beit Mirsim</i> (I = <i>Annual of the American Schools of Oriental Research</i> , Vol. XII; IA = <i>Annual</i> , Vol. XIII; II = <i>Annual</i> , Vol. XVII).
TF I, II	Petrie, <i>Beth-pelet</i> I, 1930; MacDonald, Starkey and Harding, <i>Beth-pelet</i> II, 1932.
T. N.	Tell en-Naşbeh.
TN 1, 2	Bade, <i>Excavations at Tell en-Naşbeh</i> , 1928; <i>Some Tombs of Tell en-Naşbeh</i> , 1931.
ZA	<i>Zeitschrift für Assyriologie</i> .
ZAW	<i>Zeitschrift für die Alttestamentliche Wissenschaft</i> .
ZDPV	<i>Zeitschrift des Deutschen Palästina-Vereins</i> .

CHAPTER I

STRATUM B (IRON I)

1. The occupation of Stratum B extended over the entire site within the walls of the Iron Age, which were built early in B₃, as we shall see below. Stratum B, like its predecessors, was much better preserved in the southeast quadrant than elsewhere on the site. Even here, however, its average thickness was not over half a meter, and it was never more than a meter and a half thick (except in the ubiquitous silos of the period). The excavated area of B in the southeast (Pl. 2), all of which was cleared in 1928 and 1930, was only a very little more extensive than that of Stratum C, that is, nearly 2500 square meters. In SE 21 and 31, 42 and 52, we found that Stratum A covered a layer of B deposits, which were left unexcavated except at the East Gate. Again in NW 11 and 12 there seemed to be a fairly well preserved underlying deposit of Stratum B. As will be seen from the contour map of the site (TBM II, pl. 46), however, the level of the present mound falls off some four meters between NW 21 and the West Gate, so we cannot be surprised to find only fragmentary remains of B in NW 32, 33, and 43, which were excavated to bed-rock wherever it was feasible without destroying well preserved remains of Stratum A. In these squares the slope of the hill was so great that remains of occupation were intermittently eroded by the violent impact of the winter rains, driving against the exposed northwestern side of the hill from the west or northwest. At no time in the period of nearly three centuries during which the town of B flourished, can the number of houses have been large; it is very improbable that the number of people living inside the walls ever exceeded a thousand in this period. Much of the area was occupied by grain-pits or silos, outlines of which appeared under the buildings of Stratum A in the northwest quadrant as well as in the southeast.

2. Owing to the lack of continuous building remains in Stratum B, pottery proved decisive in establishing stratigraphic sequence within the limits of the stratum. Thanks to the presence of many grain-pits (silos) in this stratum it was possible to use the broken pottery contained in their filling as a criterion for the distribution of both silos and house-remains among three phases, a pre-Philistine (B₁), a second contemporary with the vogue of Philistine pottery (B₂), and a third post-Philistine (B₃). The treatment of this material in TBM I, pp. 53-75, appears to be correct throughout, aside from a few details, mostly without bearing on the chronological picture as a whole. For the latter

see below, §§ 3-4; it is surprising how fully my conclusions have been confirmed by subsequent work, especially at Megiddo¹ and Beth-shemesh. The relative

¹ See *Megiddo* I, 7. The query in n. 7 about my statement, *Bulletin*, No. 52, p. 8, is answered very simply: I was guilty of a slip of the pen in that article, writing that the pottery of Gibeah II (time of Saul) "belongs to the transition between phases B₁ and B₂ at Tell Beit Mirsim," when I meant B₂ and B₃, respectively. In this connection it is advisable to state my present view of the chronology of Megiddo V-II, since Megiddo parallels will be constantly cited in the course of this volume. Since the appearance of the *Megiddo* volume in 1939 two long reviews by Palestinian archaeologists have appeared, one by myself in *AJA*, 1940, 546-550, and another by J. W. Crowfoot in *PEQ*, 1940, 132-147. I have since then gone over the pottery and other objects repeatedly, coming to definite conclusions which differ in certain important respects from my views in 1940, when I was still too much under the influence of Schumacher's results. The following table illustrates the views recently expressed by the above-mentioned scholars and my present position:

	Lamon-Shipton	Crowfoot	Albright I (1940)	Albright II
V	c. 1050-1000	c. 960-870	c. 1050-950	c. 1050-975
IV	c. 1000-800	c. 870-840	c. 950-733	{ IVB c. 950-915 IVA c. 915-815
III	c. 780-650	c. 800----	c. 733-670?	c. 780-733
II	c. 650-600		c. 670?-609	c. 733-609

The most significant change comes from my recognition that Lamon and Shipton are correct in rejecting Schumacher's stratigraphical results in a very important point. The latter asserted (M I, 99) that the seal of Shema, officer of Jeroboam II (cir. 782-742 B. C.), was found in the "palace" stratum a meter from the surface of the ground at a point which he marks with "n" in Pl. XXIX A, near the southwest corner of the *Palast* (really the gateway of the official residence of Stratum IVB, *Megiddo* I, 12 ff.). Schumacher's statement that the seal was found at level 186.50 m. just under the stone wall enclosing the "palace" courtyard, which here rose to a level of 186.90, is very strange indeed when confronted with the data in his own plan, which record no point over 185.36 within twenty meters of "n" (the adjacent wall is shown as only fragmentarily preserved and the level 185.36 is on the nearest preserved corner of the gate-towers)! It follows, as correctly noted by Watzinger (M II, 64) and May (*AJSL* 52, 198), that the Shema seal came from the next stratum, i. e., from Stratum III. Exactly the same is true of the contemporary Asaph seal, which was discovered by Schumacher (M I, 100) directly *above* the broken northeast corner of the same structure. Since both seals belong to the period 780-733 B. C., it follows that Stratum III must be dated here and not after 733, as I thought three years ago. It may be added that the evidence of pottery and small objects agrees with an eighth-century date, which may, accordingly, be considered certain.

It is a fundamental principle of stratigraphy, sometimes disregarded by eminent archaeologists, that most of the intact or reparable pottery from a given stratum belongs to the last period before the destruction which brought an end to the stratum in question. The range of such pottery may, accordingly, be fixed as a rule within ten or twenty years. There are occasional exceptions and there are cases where we find earlier pockets or deposits of pottery. In general, however, this principle holds. The pottery of Megiddo

date of the silos was fixed in several ways. All the larger silos, with a diameter of cir. 2-4 meters, were found to underlie the foundations of A house-walls;

V (outside of a few loci, on which see n. 10) is surprisingly homogeneous and must be dated somewhere between cir. 1020 as absolute maximum and 950 as absolute minimum. It seems to me earlier, on the average, than our B₂ and rather later than Gibeah II (time of Saul). Moreover, historical considerations suggest that the Canaanite Megiddo of Stratum V was destroyed by David, along with other Canaanite cities in the north. If Solomon had ordered the city to be abandoned in preparation for extensive building operations, the inhabitants would surely have carried off their household furnishings, including pottery. The fact that so much pottery was found points to a destruction before the new building began. In V only one vase of Philistine inspiration was found (possibly, however, intrusive from Stratum VI) and no store-jars with collared rims are reported. Yet Loud has found evidence for three building phases in one area (Megiddo I, 6 f., and n. 7), though the last of these may belong really to Stratum IV B (see below, n. 10). It follows that we cannot go appreciably above the third quarter of the eleventh century nor appreciably below the middle of the century for the beginning of V. Hence a date about 1050-975 appears approximately probable for Stratum V.—Crowfoot is clearly right in insisting on the close relation between Megiddo IV and the earliest phase at Samaria, in the time of Omri and Ahab, cir. 870-840 B. C. But to restrict the life of Megiddo IV to thirty years or a little more (p. 147) instead of the two centuries of the excavators seems pretty drastic. Crowfoot is probably right in connecting the destruction of Megiddo IV with the events alluded to in II Kings 13: 3-7, which must be dated about 815 B. C. for reasons into which we cannot enter here. The pottery of IV A then dates mainly from cir. 830-815, which agrees extremely well with the Samaria material. The Megiddo excavators are probably right in connecting the rebuilding of Megiddo in Stratum III with the long reign of the energetic king Jeroboam II, though it is quite possible that reoccupation began earlier. However that may be, a date cir. 750-733 for the latest pottery of III is exceedingly probable. Pottery, seals, graffiti all point toward the eighth century for Stratum III—and we must turn toward the second half of the century for much of the pottery, which has closer affinities with A₂ than with A₁.—Our use of pottery to date the upper three strata is complicated by the fact that it was exceedingly difficult to disentangle the stratification of these levels, buildings of which were often destroyed down to below floor-level. Frequently, e.g., we must attribute vases of "II" to III and of "I" to II. The date in 733 is fixed by the fact that Megiddo passed into Assyrian hands in that year and that the Assyrian conquest of Galilee at the same time was accompanied by wholesale destruction of towns and deportation of their inhabitants. The ware of Stratum II is most closely related to the bulk of pottery from T. B. M. A; its contents are in general admirably suited to a date in the seventh century. There was evidently much stratigraphical confusion between the pottery attributed to II and to I, since we find seventh-century types in I (which is prevailingly fifth century) and some Persian forms in II. In this connection it may be observed that the massive walls of the fortress of Stratum II (Megiddo I, 83 f.), 2.00-2.50 m. wide, as well as the construction and size of the structure (nearly 70 by 50 m.), make it probable that it was the seat of the Assyrian governor of Megiddo in the seventh century (so also Watzinger, DP II, 1, though Schumacher's figures for the width of the foundations are too high). In 679 B. C. we know from Assyrian sources (*Keilinschriften aus Assur verschiedenen Inhalts*, No. 20, line 41) that a certain Ishtu-Adad-aninu was governor of the province of Megiddo.

e. g., the first traces of them appeared April 23, 1928, two days after the walls of Stratum A in SE 32 and 33 had been completely removed. Most silos containing B pottery could be proved by careful examination to have been dug through the ash-level separating C from B by men working from above; they were thus later than the destruction of C. Since there are known cases where excavators have sliced horizontally through ancient silos, attributing their contents to the same period as remains found at the same level outside the silos, this examination was by no means superfluous. Thanks to it we could almost always differentiate between grain-pits from C₂ and B₁ stratigraphically as well as ceramically. Where earlier B silos were displaced by later ones, as in the case of silos 3, 6 and 14 (see photos, Pl. 47, a, b, d) in SE 32B, it was found that ceramically No. 14 belonged to B₁ (TBM I, § 77), whereas No. 3 was apparently a little later (or had been disturbed by later intrusions from B₂, TBM I, § 78), and No. 6 was used well down into B₃ (TBM I, §§ 85-6). Another illustration is silo No. 24 in SE 22B, which contained B₁ sherds (TBM I, § 76). It lay near the east wall of SE 22C-10, but the highest preserved point on its wall was some 70 cm. above the highest preserved point on the C wall—higher, in fact, than any L. B. wall in the immediate vicinity. Moreover, it was unquestionably sunk through the burned level which marks the destruction of Stratum C (see § 23). It was, however, difficult to determine its relationship to the adjacent walls of B on the north and west, since it could easily have been built against the former, while the east face of the latter was so badly damaged that the evidence was ambiguous. Reëxamination of the evidence convinces me that I was wrong in my interpretation of it in 1932 (TBM I). It is quite true that the large B house which occupies the adjacent corners of squares 12, 22, 13, 23 (cf. below, § 9, and Pl. 11, A) was occupied down into B₂, as was proved by finding Philistine pottery (including an entire vase, TBM I, § 80) in room 12B-3 (see § 4), but it follows the plan of an older C house (TBM II, Pl. 52 and 56) so closely, even reusing older C walls in the northwest corner, that a B₁ date for its first construction may be considered as certain. It therefore becomes highly probable that the builders of silo 24, who lived next door, broke away the outer facing of the wall on the east, in order to gain a little space. The relation of this silo to the adjacent walls would, accordingly, be the same. Moreover, silo 21 (indeterminate B), which broke into 24 after the latter had been abandoned, is not really a grain-pit at all, but rather a semi-circular bin built against the east wall of SE 22B-4, as is proved both by its method of construction and by the fact that its floor is slightly higher (cir. 20 cm.) than the floors of adjacent B rooms. Silo 22, built still later inside silo 24, is again indeterminate B in date.

3. Phase B₃ was most tangible in the vicinity of the city-wall, originally built in this period (see below, § 5). In SE 14 and 24 we were able to trace the city-wall definitely back into Stratum B; in adjacent sectors it proved impossible to demonstrate stratigraphically that its construction preceded A. In squares SE 4 and 14, together with the loci immediately north of them, as many as three successive floor levels from Stratum A were distinguished in some places; under the lowest were remains of B₃, including casemate rooms in the city-wall and house-walls of solid construction, some of which continued to be used in Stratum A. The distinction between B₃ and A₁ in this area depended largely on the respective predominance of hand-burnished wares. Crater-rims of Philistine form (though of different ware) also appeared in the former, being replaced entirely in the latter, it would seem, by bowls without the flat-topped crater-rim. The most important room attributed in TBM I (§ 87) to B₃ was the "cellar," SE 23B-8, which I had attributed to the ninth century (A₁) as we began to clear it out in July, 1930, but which I soon afterwards assigned to the late tenth century (B₃). Since then I have oscillated until recently between A₁ and B₃. Unfortunately, this locus stands apart and cannot be tied up with surrounding walls, so our dating must depend on its contents, especially on complete vases, since individual sherds may have come from older debris which fell into the room after the destruction of the quarter. Four more-or-less complete vases were discovered in this locus, of which three were published, the fourth being too broken to be of much service. The most characteristic type was the small pyxoid jar with two tilted horizontal lug-handles, semi-continuously hand-burnished, usually black, S. N. 1412 (discussed TBM I, § 96). The form is a little later in type than the related specimens illustrated in *Megiddo* I, Pl. 19: 95-99, the first three of which have flat or disk bases, whereas our example already has a slightly rounded base. On the other hand *Megiddo* No. 98 has a base like ours, and *Megiddo* No. 99 is black-burnished. The later types, *Megiddo* I, Pl. 9: 35-36, respectively from III (early eighth century if in context) and IV (ninth century or second half of tenth) show further development both in form and in decoration (e. g., No. 35 is partly wheel-burnished). A date in the late tenth would suit our example admirably, though a date in the early ninth is not excluded by our evidence. Warning against a date after the late tenth century at latest is furnished, e. g., by comparison of a pyxoid vase of the same class found at Jericho in the so-called "hilani," J, Pl. 37: B, 3 (for the provenience see Garstang, AAA XXI, 102, after a communication from Watzinger).^{1a} This vase (turned a little to one side in the photo, which gives it a slightly distorted appearance

^{1a} See Wright's remarks below, n. 10, for the date of the "hilani" of Jericho.

at first sight) is exactly intermediate in form between the two closely related pyxoid vases from our site, stratum B (TBM I, Pl. 51:4 and 5), though a tiny bit smaller than they and burnished dark brown instead of black. In the "hilani" were also found (*op. cit.*) the two juglets A, 36 (Pl. 35) and B, 6 (Pl. 37). Almost identical with the latter in form (the Megiddo juglet has been reconstructed a little too high and flaring at the broken top, and should be reconstructed after Jericho, A, 36, which is identical in form and size), size, and decoration (reddish brown burnished) is Megiddo, Pl. 5:135, which comes with related pieces from Stratum V (early tenth century). Wright attributes a pyxoid jar from Beth-shemesh, almost identical with T. B. M., No. 4 (from 24B-1), in form, size (1 cm. shorter), and decoration, to his Stratum IIa (first half of tenth century); see ASE IV, Pl. XXXVII: 28, and for comparative discussion ASE V, 130. Lest there should be any inclination to regard the Megiddo examples from Stratum V as relatively late, we may call attention to the fact that examples very closely related to No. 98, also with slightly rounded bottoms, though with wider mouths, appear in Stratum VI (early eleventh century) at Megiddo (NMP, chart VI: 13), at Tell Abu Hawam, Stratum III (QDAP IV, 7, Fig. 11; 20, Nos. 61, 63),² and at Shiloh in the ruins of the town destroyed by the

² The chronology of Tell Abu Hawam (cf. Hamilton's convenient chart, QDAP IV, 66) has been discussed by L. H. Vincent, RB, 1935, 416-437, and briefly by myself, *Bulletin*, No. 61, 27. The following table illustrates different views on the subject:

	Hamilton	Albright I (1936)	Albright II (1942)
Meg. VI	IV c. 1230-1100	12th-11th cent.	1175?-1075?
Meg. III ✓	III c. 1100-925	11th-9th cent.	1075?-1000?

What was said in n. 1 must be remembered, that the pottery from a given stratum tends to belong to the end of the period in question and cannot be distributed freely through its duration. This rules Vincent's dates out absolutely, since there cannot be the slightest doubt about the rough contemporaneity of Hawam IV with Megiddo VI (cir. 1140-1100?) or of III with Megiddo VI-V. The pottery of Hawam IV, as described by Hamilton, seems to come down a little later than Megiddo VI—but very little. The pottery of Hawam III comes to an end before Megiddo V, since hand-burnished ware is still much less abundant and important types listed there do not appear as yet. On the other hand, Cypro-Phoenician Black-on-Red I is represented by a number of examples (in Megiddo V quite a number have also been found, including four examples published ILN, 1936, p. 1111, Fig. 15), a fact which warns against a date before the late eleventh century for the close of the period represented by Stratum III. For the chronology of Black-on-Red I (which Gjerstad dates too low) cf. below, § 4, and *Studies in the History of Culture* (Leland Volume), p. 35, n. 78. The excavations at Samaria have yielded the upper part of an imported ointment juglet (S I, 282, Fig. 157: 3d) of the same type as Gjerstad's Black-on-Red II (*Cyprus*, II, Pl. CXV: 6), and two other sherds from Samaria (S I, Fig. 157: 3a, c) appear to belong to the same Cypriote stage, which was then presumably at its height about the second half of the ninth century (Samaria was

Philistines cir. 1050 B. C. (Kjaer, JPOS X, 95, Fig. 4). Since the last mentioned two pyxids are virtually identical in all respects and are closely related to two pieces from Jericho (outside the "hilani"), J, Pl. 32: A, 11a-b, it follows that a type of pyxis which must be regarded as the direct precursor of our specimens from B₃ was already current throughout Palestine early in the eleventh century. In the face of this definite and strictly independent evidence it is highly improbable that the pyxis from SE 23B-8 dates from after B₃. Moreover, all other pieces from this locus, including sherds, agree. For example, the elongated buff juglet with vertical burnishing, TBM I, Pl. 51: 12, is closely related to No. 11 in the same plate, from B context in the same square, and less closely to *Megiddo* I, Pl. 5: 138-141. It is undoubtedly somewhat later than they are, but its oval mouth separates it sharply from the ubiquitous elongated juglets of A₁ and A₂ at T. B. M., all of which have round mouths.^{2a} It is still nearer juglets of Hawam III (for chronology see above, n. 2): QDAP IV, 7, Fig. 12, and 20, No. 58. In this connection it may be noted that the early juglets of this type from Tomb V at Tell en-Naşbeh (TN 2, Pl. XVII: 9, Nos. 1411-14), which must be dated somewhere between 950 and 850 B. C., have the same form and in two cases the same burnishing, but include three round mouths and only one oval (pinched) mouth. The deep bowl TBM I, Pl. 50: 7, also from SE 23B-8, is similar in general form to bowls of this class from the tenth to the sixth centuries, but its rim marks it as quite distinct and archaic. S. N. 1420, a black-burnished juglet (not published),

founded about 870 B. C.). If we date Black-on-Red I cir. 1075-950 and Black-on Red II cir. 950-800 we are presumably not far off. Of even greater interest for chronological purposes is the discovery at Hawam III of three pieces with strong Thessalian proto-Geometric affinities (Heurtley, QDAP IV, 181). I am very skeptical about the Thessalian origin of No. 2 in Heurtley's plate, since his argument for such origin is based partly on a highly improbable theory that the local potters borrowed motifs from their local hand-made ware to use in fine ware (which was doubtless imported into both Thessaly and Palestine from a common center in southwestern Asia Minor or the adjacent islands). In the other two cases he is probably right. Heurtley's date for his Thessalian group between 1000 and 850 is surely too late; a date between 1050 and 950 is much more reasonable. On the dates at which Mycenaean ware was replaced successively by sub-Mycenaean and proto-Geometric, see now especially Kraiker-Kübler, *Kerameikos* (1938), pp. 162-164, and Daniel, *AJA*, 1940, 554 ff.; 1942, 286 ff. Kraiker and Kübler begin their sub-Mycenaean between 1150 and 1120, their proto-Geometric in the first decades of the eleventh century, and their Geometric in the tenth century; Daniel (p. 556 b) begins the sub-Mycenaean about the middle of the twelfth century. It is probable that the proto-Geometric began both in Greece and in Cyprus around 1100 B. C., and that it was replaced by the Geometric about the middle of the tenth century B. C.

^{2a} Wright notes pertinently that the pinched-mouth juglet appears in *Megiddo* V but not in IVB, in Beth-shemesh IIa but apparently not in IIb. See further below, §153.

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unfortunately lacks the neck and handle, but it doubtless belonged to the well-known type discussed TBM I, § 94, from the tenth and ninth centuries (Megiddo V-IV). The sherds figured TBM I, Pl. 27: 1-33 and described there in § 87, seem to contain nothing later than the tenth century; in particular there is not a single specimen of true wheel (ring)-burnished ware in the entire deposit, the sherds with horizontal burnishing having been decorated by hand. It seems probable to the writer that the wheel-burnishing mentioned occasionally in connection with burnished bowls of Megiddo, Stratum V, is often this horizontal burnishing, done by hand while the bowl was slowly turned on the wheel and very different from the true, though coarse, wheel-burnishing of the following period (B_3 - A_1). This survey shows that our published date for the "cellar" 23B-8 toward the end of B_3 can scarcely be wrong.

4. Since there can be no doubt that the history of Stratum B was checkered and that we may expect to find our loci staggered, from the chronological point of view, it will be well to make a rapid survey of pottery-bearing rooms, from the same angle. We have already seen that 23B-8 is probably B_3 and that 24B-1 (near the B_3 city-wall) belongs to the same phase. The correctness of the latter attribution is shown by the chordally burnished bowl (TBM I, §§ 87, 92) from 24B-1, for which the closest parallels I can find are in Megiddo V (Pl. 32:165, etc.), from the early tenth century. SE 33B-2 is also apparently from B_3 , as is indicated by the seven-spouted lamp, TBM I, Pl. 23: 3, on which see especially Wright, ASE V, 142, where several examples from Beth-shemesh are dated in early IIb, i. e., late tenth or early ninth century. The other evidence is not so clear, since the lamp published TBM I, Pl. 23: 2 exhibits Late-Bronze features and may come from B_{1-2} , while the two bowls (TBM I, Pl. 51:14-15) are ambiguous. Both are small, thick-walled, with disk-base and plain surface (no slip or burnish). The type is not reported from Iron-Age deposits at Megiddo or Beth-shemesh, whereas there are excellent parallels from Late-Bronze Beth-shemesh (e. g., ASE IV, Pl. LVIII: 14). Other excellent parallels were found in Tomb 1 (11) at Beth-shemesh (BSG, p. 189, Nos. 486, 532, 538), which covers most of the thirteenth and twelfth centuries, but is prevailingly Late Bronze. It may be observed that bowls of this general class from Stratum C at T. B. M. were nearly always more elegant in form, thinner of wall, and better levigated in texture; comparative observations from Megiddo and Beth-shemesh support my remarks in TBM I, §§ 50 and 92. A date for these bowls in B_{1-2} seems, accordingly, indicated, and locus SE 33B-2 would seem to have been successively occupied at two periods in B. This deduction is supported by the adjacent locus, SE 33B-3, which yielded three whole or broken bowls, S. N. 505, 506 and 507, all with slightly curved

walls, disk-base, and plain buff surface. No. 505, the only one drawn (unpublished), resembles BSG 189, No. 482, very closely in form; it is a little larger and has a more pronounced disk-base. TBM I, Pl. 51:19, which is virtually identical in all respects, unfortunately comes from an even more uncertain locus, 23B-3, and we were in some doubt as to whether it really belonged to B or to C. However, the levels favor an attribution to B, since they overlie certain C walls or areas. The character of the pottery and the comparative levels (33B-3 was lower than 33B-2, which appears to have B remains from two phases) point to a date in B₁ for both loci 23B-3 and 33B-3. The most important structure certainly occupied in B₂ (the Philistine period), judging from its pottery, was the large house in squares SE 12, 22, 13, 23 (on which see § 9, below). In locus 12B-3 there was a small grain-pit (silo 43), containing sherds of Philistine and other pottery from B₁₋₂ (TBM I, § 81), projecting over the east side of which was a large flat stone, on which was found a small, but characteristic Philistine crater (TBM I, Pl. 51:18). In the neighboring room 22B-4 were found two whole vases, the curious spouted bowl TBM I, Pl. 50:9 and the imported Phoenician perfume-juglet TBM I, Pl. 51:9. The former has a close parallel in form and size, finish, etc., in a bowl found at Beth-shemesh under a known locus of Stratum III (ASE IV, Pl. LVI:7), a fact which may point either to L. B. date or to a date early in Iron I. In view of the fact that the Philistine bowl is relatively late in type, I should propose a date in the eleventh century for the spouted vase. The imported perfume-juglet (Black-on-Red I) is unquestionably in context, since, e. g., part of another was found in silo 43, immediately under the stone on which a Philistine jug was discovered. Similar juglets occur in Megiddo V (*Megiddo* I, Pl. 17:87 [five examples], 88 [one from IV filling], and ILN, June 20, 1936, p. 1111); for recent comparative discussions see Wright, ASE V, 132 f., and Albright, *Studies in the History of Culture* (Leland Volume), p. 35, n. 78. To avert confusion it may be pointed out that the difference of some 40 cm. between the floor-levels of rooms 12B-3 and 22B-4 is illustrated by the fact that the loci were connected by a flight of two steps at the southeast corner of the former. This house was thus occupied and abandoned in the course of the eleventh century (judging from the ointment juglet, which is not likely to be earlier than cir. 1050 B. C.). As we shall see in § 9 the house was certainly built in B₁. In B₃ it was presumably replaced by houses of the new style, preserved just inside the city-wall. Also to B₂ belongs probably the bowl published as C (TBM I, Pl. 47:7), though it was found just below a B₃ locus (SE 14B-5), near the city-wall. The wavy (cyma) profile is, however, so characteristic of B₂, the age of Philistine pottery between cir. 1150 and cir. 1000 B. C., that this date seems highly probable. Examples abound in B₂ as

well as in the contemporary Stratum III of Beth-shemesh: for B₂ cf. TBM I, §§ 85 and 86 and for Beth-shemesh see Wright, ASE IV, Pl. LXII: 6-9, LIX: 13-14, 20, etc., and ASE V, 130 (all from Stratum III, which dates mainly from the eleventh century). In this connection we must remember that in SE 12, Philistine bowls and sherds were found in considerable numbers below the uppermost B level, which contained B₃ sherds (cf. TBM I, § 82). Light on the subject is derived from the excavation diary of 1930. On July 16th, after clearing away the walls of Stratum A in SE 22-23-24, 12-13-14, and 2-3-4 and removing miscellaneous A debris, we began finding pure B pottery (with some A₁) more or less all over the area. In the first three or four days (to July 19th) irregular wheel-burnishing and horizontal or other hand-burnishing predominated; thereafter horizontal burnishing stopped almost entirely. During these days crater-rims were found in numbers, but without decoration or tilted horizontal loop-handles. Cyma profiles (discussed immediately above) were abundant and were often beautifully hand-burnished. In this whole area the level of the conflagration which destroyed B₃, though not absolutely continuous, appeared again and again below A foundations, and enabled us to make a rather clean separation between A₁ and B₃ in places where it appeared. Philistine ware did not begin to appear until we had dug through this top level, which varied considerably in thickness in different areas. It probably follows that Philistine ware went out of use about the third quarter of the eleventh century (see above and note that none was found in Megiddo V [with one possible exception] or Gibeah of the age of Saul [end of eleventh century]), but that the crater form and wavy-profiled bowls survived to the end of the eleventh or the beginning of the tenth century. That they cannot be dated any later seems to follow from their absence in Megiddo V, most of whose pottery dates from the early tenth century (see above, n. 1). The destruction of the eleventh-century house and the abandonment of contemporary loci would then fall comparatively early in the second half of the eleventh century—say about 1050 B. C. in round numbers. There is no reason to suppose that the devastation of the site was more than partial or that there was any interruption (except, of course, in intensity) of occupation.

5. No traces of a city-wall from early B have been discovered. I was wrong in deducing from the fact that the construction of some early B houses undoubtedly followed immediately on the destruction of the town of Stratum C and from the fact that the foundations of the city-wall of B go down in some places in SE 14 and 24 into the bed of ashes marking the destruction of C, that the B city-wall also went back to the very beginning of period B (so, e. g., *Bulletin*, No. 31, p. 6; JPOS, 1931, p. 121; APB 102). A relatively early date for the city-wall is disproved by a number of subsequently discovered

or more recently understood facts. For example, in SE 24 we discovered (1930) that the ruined foundations of the C₂ city-wall were crossed at one point by a fragmentary house-wall of early B date. It is true that at first we were inclined to treat this fragment as of C, but the levels of its foundation and preserved top were much too high for C₂, besides failing to tie in with adjacent walls of this phase. Moreover, the city-wall in question was easily proved to belong to C₂ (TBM II, § 71), so the fragment had to be later. Finally, the fragment of wall in question was just under the foundations of both the B city-wall and adjoining house-walls of B₃, on a level with finds of an earlier phase of B. Its date in B₁ or B₂ is, accordingly, certain. While it is true that in SE 14 and 24 we found that the foundation of the Iron-Age city-wall rested in C debris for a considerable distance (see the photographs of stratification, TBM II, Pl. 6, a-b, 7a), we also found that they were underlaid by as much as a meter of B debris at some points in SE 33 (see below, Pl. 41, c, where the dark band at the bottom is ash-filled earth representing the destruction of C₂). A rapid glance at the plan of Stratum B in the southeast quadrant is quite enough to show that house-walls known to belong to this stratum in SE 24 and 14, were built against the city-wall, at only slightly higher foundation-levels. On the other hand, walls and silos of B₁₋₂ do not stand in any recognizable relation of plan to the Iron-Age city-wall. The Iron-Age city-wall cannot be as old as the B house-wall foundations at SE 33B-10, which are on exactly the same level as the foundations of the adjacent city-wall. More massive walls require deeper foundations. It follows from these and other parallel observations that the B city-wall must date either from relatively early in B₃ or possibly from very late in B₂, after the partial destruction marked by the abandonment of the large house around SE 12B-3 (see above, § 4). After the writer had reached this conclusion several years ago it was particularly interesting to find that Wright had arrived independently at the same approximate date for the closely related casemate wall of Beth-shemesh (see below), which belongs to Stratum IIa, cir. 1000-950 B. C. (ASE V, 23 f.).

In early B the town was rather well protected on the southeast by the massive Bronze-Age revetment (TBM II, Pl. 16-17), the damaged top of which must still have risen from five to eight meters at different points above the level of the rock on which it was laid. That this was kept cleared, at least in later times, is shown by the fact that we found pottery from the last phase of the city's history on the outside of the revetment, down to within a few feet of the rock, whereas the core of the glacis filling had no pottery in it later than Middle Bronze II (TBM II, § 37). Along the top of this revetment (which was presumably patched up where it was too badly damaged) there may have

been a low stone rampart, to protect the defenders of the town from the missiles of attackers. That this rampart was at best relatively fragile is indicated by our failure to find traces of it; that it existed is suggested by a certain accumulation of early B debris at some points along the fortification line, especially in SE 33.

6. The casemate wall of B is a good example of this type of fortification. We have two fine specimens of it, both exposed for a considerable length (see Pl. 41, a; 42, a-b). In the southeast, where its B date is stratigraphically certain in squares SE 14 and 24, we may be reasonably sure by analogy that the preserved foundations belong in the main to Stratum B as far east as the point in SE 52 at which it was broken off in antiquity. Elsewhere on the site, where we cleared extensively along the exterior line of the Iron-Age wall in 1926 (see TBM II, Pl. 47 for an outline of the parts cleared in quadrants SW and NE), we found that the foundations, which were usually all that was preserved, obviously belonged in principle to the same construction. This fact naturally does not exclude the possibility that the wall may have had to be rebuilt completely in places, using the same stones and the same type of masonry. The wall in question is everywhere 1.50-1.60 m. in width (averaging 1.55) except in NW 31-34, where it averages two full meters in width; the junction of the two sections of wall is found in NW 31 (see below, Pl. 6). North of this junction the wall is some 2.00 m. wide, south of it 1.55 m. wide. That the two-meter wall belongs to the same general age is shown by the fact that it underlies at least four periods of construction at the West Gate (below, § 27), the oldest of which cannot be later than the ninth century. On the other hand, in 1932 we found sherds of A₁ type between the foundations of the revetment and the city-wall in NW 33-14, showing that the revetment, at least, cannot be older than the late tenth century and *may* come down well into the ninth century. It follows that the two-meter stretch is probably a secondary addition in the early ninth century, to replace an older 1.50-meter stretch which was pretty thoroughly battered in the general destruction at the end of Stratum B. Why this section should have suffered relatively so much will become clear when the contour map, TBM II, Pl. 46, is studied, together with the outline of the Iron-Age city-wall in Pl. 47. Just south of the West Gate in NW 42 the two-meter contour lines begin to bulge toward the west, indicating the presence of a comparatively gentle slope at this point, north of the shallow ravine bounding the expedition camp-site on the northwest. The existence of this easy approach to the town, combined with the absence of extant remains of Bronze-Age defences facing it (the height of the glacis below the floor of adjacent houses of Stratum A averaged less than two meters here instead of over six meters as in the southeast), meant that stronger fortifica-

tions were needed. Despite their presence this part of the fortifications was destroyed much more often in the Iron Age—and presumably also in the Bronze Age, to judge from the disappearance of early fortifications—than the section directly opposite in the southeast. We may accordingly deduce with a high degree of probability that the entire city was surrounded with a 1.50-meter wall early in B₃ and that part of this line in the northwest was replaced 50-150 years later by a two-meter wall. Study of the casemate system further suggests that some of the irregularity which it exhibits in its latest preserved form, is due to reconstruction at different periods in A (see below, § 26). Examination of the plan of Stratum B in SE 14 and 24 shows that the inner casemate wall was here formed by three different sections of walling of three different widths, running roughly parallel with the city-wall, but breaking off at two corners, one on either side of the preserved stretch. Since one of these corners turns toward the city-wall, while the other turns away from it, it is obvious that the interruption is purely accidental, and that the casemates continued in both directions. In fact, it may be that the foundations of the A casemate walls in SE 14A and 4A were of B₃ date; the fact that the outer corner of SE 14B-3 diverges about 30 cm. on the plan of B from the location of the corresponding point in the south face of the A₂ wall can be explained partly by the narrowing of the house-walls when they were rebuilt in A and partly by sagging (the accuracy of William Gad's detail plans was so great that little can be allowed here for error in surveying or drawing). The thickness of the north wall of the A casemates in SE 14 and 4 is a very strong argument in favor of an original B₃ date for them. Where the strong casemate walls of B₃ were replaced by walls along a different line in A, as between SE 24A-4 and 5, the new walls were very much thinner and weaker. This makes it reasonably certain that, e. g., the inside wall along the casemates in SE 33 is of A construction—probably A₁. However this may be, there were certainly two successive phases in a number of casemate walls (e. g. in the transverse wall east of SE 43A-2, Pl. 41, b), and numerous changes were made at different times. E. g., note the change in the width of the inside casemate wall in NW 34A-2 and NW 32A-9, and note that in both cases the older wall was closely comparable or even identical in width with the older casemate walls in SE, while the younger walls were equally comparable with the later casemate walls in SE. From these facts it would follow that the B₃ wall averaged 1.55 m. wide in its outer shell and about 1.00 or a little more in its inner shell, whereas the A₁ wall changed these dimensions to about 2.00 and 0.70-0.80, respectively.

Comparison with the casemate wall of Stratum IIa at Beth-shemesh is particularly instructive. The wall of Tell Beit Mirsim is a little more regularly and more solidly constructed and the stones are larger, on the

average—a fact to be explained presumably from the greater accessibility of good stone there. Dimensions of the two systems are, however, almost identical (the apparent differences noted by Wright [ASE V, 24] are due solely to the fact that he compared the A system in SE 33, since the older B plans were not accessible to him at the time): the outer walls of both average 1.50 m. in width, the inner walls 1.00-1.10 m., and the space between the two walls averages 1.50 to 2.00 m. in both. In view of the fact that the two walls were roughly contemporary (first half of the tenth century, as noted above), this extraordinary resemblance in plan, dimensions and construction must probably be attributed to common supervision. It is scarcely necessary to point out the great difference between these two Judaeen casemate walls and the known or probable fortifications of Solomon and his immediate successors at Megiddo, Gezer, and elsewhere. Attribution to the time of David (cir. 1000-960 B. C.) then becomes highly probable, a deduction which is strongly fortified by historical considerations (see below, § 23).

7. The casemate principle in city-wall construction seems first to appear in Late-Bronze Asia Minor, during the period of the Late Hittite Empire (cir. 1400-1200 B. C.). Good examples are known from Boghazköy (Puchstein, *Boghazköi*, Pl. 9, 15, 20, etc.), where they date from the fourteenth or possibly the fifteenth century (Bittel's third *Bauperiode*), and from the Hittite acropolis at Mersin in Cilicia (Garstang, AAA XXVI, 91; Burkitt, *ibid.*, 96; FitzGerald, *ibid.*, 136, where it is dated cir. 1500-1450 B. C.), which doubtless belongs to the same period, since the plan of construction is almost identical. From Asia Minor this type of fortification would seem to have been introduced into Palestine through Syria after the Hittite conquest in the fourteenth century. We find casemate construction in the Iron-Age city-walls of both Sham'al (*Ausgrabungen in Sendschirli*, II, 133 ff. and pl. XV-XVII, etc.) and Carchemish (Woolley, *Carchemish*, II, 46 and Pl. 3). These constructions are commonly supposed to go back to a comparatively early period, between 1200 and 900 B. C., but precise chronological evidence is wholly lacking, owing to the fact that the ceramic criterion was still unavailable when these sites were excavated. In Palestine it appears first in datable context in the fortress of Saul at Gibeah, dating from 1020-1000 B. C. (*Bulletin*, No. 52, pp. 7 f., where other fortresses of the same general class are listed, but without fixed dates). At Shechem there is a fragment of Iron-Age casemate wall, dated by Welter after the fourteenth century B. C. (JDAI, *Arch. Anz.*, 1932, 309 f.; cf. MAB I, 187 f.). Since it is almost certainly earlier than the wall and gate of the tenth-ninth century, we may consider possible attribution to Abimelech (third quarter³ of eleventh century). The most important example of casemate

³ For the approximate date of Abimelech see my note, ARI 206, n. 58.

walling is, however, undoubtedly the acropolis of Samaria (Reisner, *Samaria*, I, 99 ff., II, plan 5; Crowfoot, PEFQS, 1935, 185 ff., and Pl. VII), which belongs to the second and last Israelite phase of construction in the acropolis, to be dated not before Jehu and not after Jeroboam II, i. e., between 840 and 750 B. C. The casemate wall of Samaria exhibits both normal casemates arranged end to end along the inside of the outer shell (on the west and south sides) and transverse casemates, with their axes at right angles to the wall (on the north side); this latter type was common in the preceding period in Asia Minor and northern Syria. It is remarkable that this casemate construction is not found in the roughly contemporary walls of Megiddo, Tell en-Naşbeh, or in general in city-walls of Solomonic and later date. It seems, accordingly, to have been most popular in Palestine during the late eleventh and early tenth centuries, e. g., in the time of Saul and David, and to have been employed only occasionally thereafter. It may be added that Gibeah and Tell Beit Mirsim agree in the double use made of casemate chambers, both as compartments filled with earth and stones to strengthen the wall as a whole, and as store-rooms communicating through connecting doors with houses built against the wall or with open courts.

8. No trace of a city-gate of period B has been discovered under the A remains at the West Gate and Tower (Pl. 6). Since no earlier building remains could be identified there with assurance, we may safely suppose that the city had only one gate until the West Gate was built in the late ninth or the early eighth century B. C. At the East Gate (Pl. 5) the situation requires analysis, and our results can claim only probability until further excavations have been undertaken, removing later constructions of Stratum A which were left intact in 1926. In the East Gate we found the foundations (only one course) of the city-gate of period E-D (TBM II, § 37). 40 cm. above the foundations in question (level 493.40-45) was the burned level marking the destruction of Stratum D by fire (i. e., just above the Middle-Bronze floor level at this point). In our four-meter trial pit of 1926, sunk seven meters to the northwest of the left-hand inner pier of Stratum A, along the axis of the gate, we found the same burned level (subsequently identified by the sherds found above and below it) at 493.35-40, i. e., at almost exactly the same height. In the trial pit we found a thick deposit of ashes between Strata C and B at level 493.90-494.05, i. e., about 60 cm. higher. In the gateway proper we identified about half a meter of C debris, which would bring us to the same conflagration level about 494.00 for Stratum C. The sketch-plan in Fig. 1 shows all the clearly identifiable remains of older Iron-Age constructions B₃ and A₁) at the East Gate. All foundation levels are at or a little below the conflagration level of Stratum C, as we should expect, since foundation

trenches for such relatively massive constructions had to be sunk at least half a meter below what was then ground level. It becomes immediately clear that the pier at the end of the main city-wall coming from the southwest is a later restoration, since its foundation is 36 cm. higher than the foundation of the same wall four meters from the end of the pier; moreover, the older wall made a sharp turn at the corner (Pl. 2). Since we exposed the interior face of the city-wall for several score meters toward the southwest and found no sign of

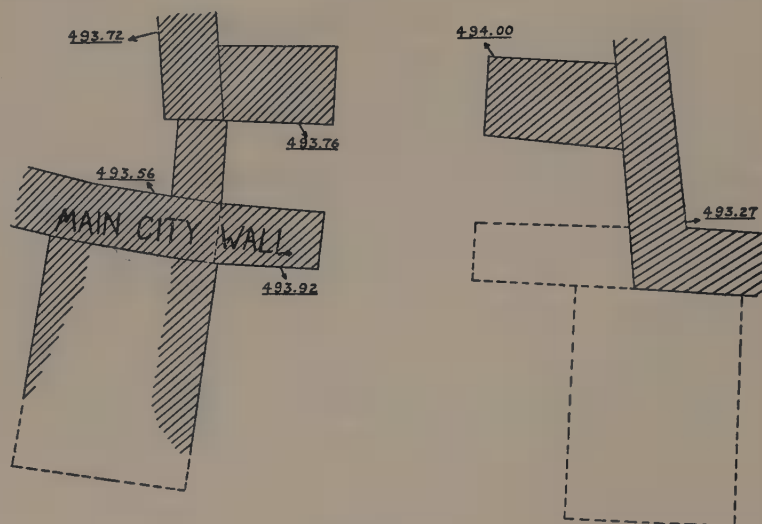


FIG. 1.

drastic reconstruction, there can be no doubt that the wall here belongs to phase B₃ and that the reconstructed pier is later. Turning to the larger pier north of the main city-wall (at the upper left of the sketch-plan) we observe that it is 2.00 m. instead of 1.55 in thickness, like the twin pier on the opposite side of the gateway. The pier proper has its foundation at 493.76, a fact which makes it likely that it was built after the adjacent B₃ wall, since the latter, though it had less than three-fourths its width, was founded at 493.72 and was thus probably contemporaneous with the walls of Stratum B₃ to the west of it. In other words this wall probably belongs to B₃ and the pier is presumably later. Under the pier were remains of a similar structure of uncertain width, going down to 493.37. Though these remains are entirely below the burned level of Stratum C, they lie at the same angle as the gateway of the Iron Age and may, accordingly, be tentatively attributed to Stratum B.

If so they suggest that the gateway of Stratum B₃ resembled the gate of the sketch-plan quite closely, the principal difference being probably that the inner pair of piers were only about 1.50 m. in width instead of 2.00 m. The latter width points to contemporaneity with the A₁ reconstruction of the B₃ city-wall in the region of the later West Gate, which also replaced the older width of 1.50 m. by a new construction 2.00 m. wide. This deduction as to the relative age of the structural parts of the East Gate becomes even more probable when we note that the opposite inner pier is founded at 494.00 m., over 80 cm. higher than the foundation of the adjacent part of the main city-wall of B₃.^{3a} The difference between the foundation levels of the opposite piers is presumably due to the difference in the preserved height of the older piers (? see above) on which they were founded. One of the two original flanking towers (on the southwest) has been almost entirely preserved; it is built in the style of the B₃ wall, to which it may go back. My reconstruction of it in Fig. 1 is probably correct; the opposite tower has been wholly reconstructed. The extant tower is 4.50 by 6.00(?) m., constructed in casemate fashion with a small chamber in the center.

Typologically the plan of the East Gate in A₁, which presumably followed the B₃ plan closely, aside from the probable increased width of the piers, goes back to Bronze-Age antecedents, which have been discussed in TBM II, § 38, as well as by Wright, ASE V, 21. Since Wright's publication an additional example from Megiddo VII (13th century) has been published (Loud, *The Megiddo Ivories*, p. 4, Fig. 1); it seems to have almost exactly the same plan and dimensions as the North Gate of Shechem, which was built not later than the fifteenth century B. C. Both these gates continued in use for centuries, just as did the similar gateway of L. B. Beth-shemesh. The main gate of the acropolis at Sham'al, which seems to have been built in the late eleventh or tenth century B. C., to judge from the style of the carved orthostates with which its walls are lined (*Sendschirli* II, 122 ff. and Pl. XIII; III, 208 ff.),⁴

^{3a} An error of mine in Pl. 5, SE 42A-4, must be corrected. In reducing the angular measurement of the level of the top of the pier, which I made with an alidade in 1926, I made a mistake, which was discovered after the plates had gone to the engraver. The true figure for the foundation of the pier should be 494.00 instead of 495.34 and for the top 494.90 instead of 496.24. I rechecked all the other levels, but found no other mistakes.

⁴ These orthostates are closely related in style and content to the orthostates of the Kapara palace at Gozan (Tell Halâf), which must be dated in the tenth century B. C. Kapara himself probably flourished toward the end of the century, as I hope to make probable elsewhere. There is not the slightest basis for the high dating of Herzfeld, and steadily accumulating stylistic parallels point to the tenth century. On the general archaeological evidence for the date of the Kapara stratum see Braidwood, *AJSL*, 1941,

also has two pairs of piers arranged much like ours, but on a more imposing scale. Before the end of the tenth century, at the latest, a new style made its appearance in Syria and Palestine; the piers were lengthened and the recesses between them were deepened, becoming side-chambers. In this style there might be two or three sets of piers. In the Solomonic gateway of Ezion-geber (Glueck, *The Other Side of the Jordan*, pp. 100 ff.) there were three sets of piers, six in all. In the nearly contemporary gateway of Lachish, presumably dating from the reign of Rehoboam⁵ at the end of the tenth century, there were also three pairs of piers (Glueck, *op. cit.*, p. 103). The "Solomonic" gateway of Megiddo probably dates from the same time.⁶ The reconstructed Israelite gateway of Megiddo III, probably from the early eighth century, follows the

364 ff. I am in full agreement with Braidwood, except that he is inclined to date the earliest objects after 900 B. C. instead of after 1000, as I should do. It must always be remembered that the Assyrian style gained the upper hand at Sham'al at least by cir. 840 B. C., as we know from the carvings on the Kilamuwa stela, and that this is, accordingly, an absolute *terminus ante quem* for the reliefs of pre-Assyrian style.

⁵ The historicity of the list of towns in Judah fortified by Rehoboam, which includes Lachish (II Chron. 11: 5-10), has been very ably and successfully defended by G. Beyer (ZDPV, 1931, 114-134). Of the fifteen towns in that list, only two sites were then uncertain (Gath and Lachish) and the site of Lachish is now definitively fixed at Tell ed-Duweir, while my identification of Gath becomes yearly more probable.

⁶ There were two successive Israelite gateways at Megiddo, the first with three pairs of piers, the second with only two such pairs. The latter belonged unquestionably to Stratum III (*Megiddo* I, 74 ff.; Albright, *AJA*, 1940, 550), i. e., to the early eighth century with Loud and Lamon, not to the late eighth as I thought. The former was attributed by Guy to the Solomonic period, while Loud and Lamon ascribe it to an earlier stratigraphic phase of III ("IIIB") and think that it never came into use, but was replaced by the final form before it was completed. However, it is impossible to determine by excavation in such cases whether there was once a superstructure or not; inherent probability is very strongly in favor of its existence. Moreover, it can be shown that the two-pier system of the Iron Age tends to be later than the three-pier system. In view of the established stratigraphic sequence, palace of IVB—city-wall of IV—house-walls of later IV (*Megiddo* I, 27, 30 f., etc.), we must probably attribute the palace of IVB and the unpublished gateway discovered by Loud (*Megiddo* I, 74) to Solomon, and suppose that this phase came to an end with the capture of the city by Shishak, shown to have happened by the fragment of his stela found by Fisher. The gate and city-wall of Stratum IV would then date from the end of the tenth century or the early ninth, since it is scarcely probable that an exposed town of such importance would have remained unfortified long. Crowfoot's effort to lower the date of the city-wall to III (PEQ, 1940, 137) is highly improbable, if not impossible, for the stratigraphic reasons already given. There is an unmistakable resemblance between the city-wall of Megiddo and that of Tell en-Naşbeh, the former averaging about 3.60 m. wide with offset masonry blocks averaging 6.00 m. in length, and the latter averaging about 4.00 and 8.00, respectively (judging from the published sections of wall). Cf. also n. 7 on the wall of Shechem.

same style, but with only two piers. The gate of Tell en-Naşbeh, probably from the early ninth century (Badè, *A Manual of Excavation in the Near East*, p. 17), is somewhat different from Megiddo III, and resembles our T. B. M. East Gate of A₁ very closely in the arrangement of the piers (disregarding the flanking towers): the T. N. piers are 2.50 by 1.50 m. in horizontal measurement while the T. B. M. piers are 2.50-3.50 by 1.50-2.00 m. (1.50[?] when they were first constructed); the space between the piers is the same in both senses in the two sites (4.00 m. between piers on the opposite sides of the gate and 2.25 m. between piers on the same side). It may not be accidental that the two gates must be nearly contemporary. Related, but not identical, is the East Gate of Shechem (Welter, JDAI, *Arch. Anz.*, 1932, 306 ff.) which was presumably built by Jeroboam I at the end of the tenth century (I Kings 12:25).⁷ The three inner gates in the double city-wall of Sham'al, which seem to go back to the tenth or the early ninth century, to judge from the carved orthostates of the South Gate (*Sendschirli* II, 111 ff., III, 202 ff.), illustrate the same development of plan that we find in Palestine after cir. 950 B. C. The outer South Gate of Sham'al had two flanking towers about 4.60 m. square and thus comparable to ours in dimensions. This comparative survey happily confirms our stratigraphical and typological attributions: the plan of the older East Gate of the Iron Age, illustrated in our Fig. 1, belongs to A₁, probably to the early ninth century, and the inferred precursor in B₃ must have had a similar plan, which can scarcely be dated over a century earlier.

9. Only one house of Stratum B could be adequately reconstructed: the large house of B₁₋₂ already discussed above (especially § 4) around SE 12B-3. A sketch-plan of this house at its latest stage of existence is given below, Pl. 11, A. It stands on the site of a Late-Bronze house of roughly similar plan (TBM II, § 72, Pl. 52, 56), some of whose walls continued in use after reconstruction. The exterior walls of the L. B. house were originally about 90 cm. thick, on the average; reconstructions, especially on the east, where the west wall of the neighboring house to the east was used as a party wall by the builders of the last phase of the house, reduced the width of the exterior wall

⁷ Cf. MAB I, 188. Sellin's original ideas have often turned out to be more correct than the final conclusions of his colleagues, who were sometimes inclined to disparage the value of historical and empirical deductions. Unfortunately, ceramic evidence is still lacking, since the admirably conducted campaign of Steckeweh in 1934 (ZDPV, 1941, 1-20) was too brief to clear up the chronology of the walls. It may be noted in passing, however, that the Iron-Age wall along the east of the site was about 3.30 m. wide and was constructed in offset blocks about 15.00 m. long, like the Megiddo wall, which I should attribute to the same period (above, n. 6).

in several places. The west exterior wall of the L. B. house (west of SE 12C-1) continued in use in Iron I, but its width was reduced about 10 cm. The partition wall between SE 12C-1 and 2 continued in use between SE 12B-2 and 3 without change in width. Much more striking, however, is the fact that the other walls and rooms were changed only in precise location, not in disposition. Note particularly the rooms along the eastern side of the house. It must, however, be noted that I made an unquestionable mistake in TBM II, where the wall of large stones between SE 22C-9 and 8 is clearly nothing but the lower part of the Iron-I wall, with the same construction and higher levels, between SE 22B-4 and 3. This is proved by identical location, width and construction, to say nothing of the fact that the wall in question crosses the exterior wall of the C house on the east! This partition-wall must, accordingly, be wholly deleted from the C plan. The principal difference in construction between the houses of C and of B consists in great increase in size of the stones used in the foundations and substructures of the walls in the latter. Since this change did not necessarily make for stability of the superimposed adobe wall, it may be considered as an instance of regression in the arts of culture. More energy and less skill were certainly involved. These large stones were presumably taken from the ruined city-wall of C₂.

The court of the house remained in the same relative situation in the Iron Age as in the Bronze. Curiously enough, this resemblance extended even into details. For instance, the L. B. house had an oil-press^s in SE 12C-1, and

^s This little oil press was discovered July 31, 1930. After digging to the bottom of the B grain-pit (silo 43), which was plastered with *ṭīn* instead of with *ḥawārah* (limestone marl) as usual, we found that it rested on a sloping flat stone slab, nearly covering the entire bottom of the pit. We not unnaturally supposed that this slab had belonged originally to the pit. However, on clearing the area in question down to Stratum C the following campaign, we discovered that the flat slab did not properly belong to the B grain-pit at all, but to an older installation. Around the large slab was a circle of smaller stones forming a shallow basin. At the east end of the basin was another smaller flat stone, over which ran an aperture in the wall of the basin, lined with *ṭīn*. See the photo of the basin in Pl. 48, a. The liquid which ran down the sloping slab of stone and through the aperture, was collected in two large vases (Pl. 66: 3-4), one of which (S. N. 2146) was placed inside the other (S. N. 2141). There can be no reasonable doubt that the installation, whose C date is fixed not only by stratigraphy but also by the typology of the vases, was an oil press. The over-ripe olives were crushed by pounding and the oil ran down into the larger vase, where it settled and gradually rose until it flowed into the smaller cooking-pot. In this way the cleaner oil could be taken out of the settling basin without delay or loss of the precious liquid. Another olive-press of Stratum C was described in TBM II, § 74 (where I referred ambiguously to the press now described as being "in silo 43"). For numerous parallel installations at Beth-shemesh see ASE V, 75 f., with references to photos (to which add ASE III, Pl. VII, from room 315). All these installations seem to belong to the tenth century

almost directly over it, with a vertical interval of some 16 cm. between, was constructed a somewhat larger one in the Iron Age (silo 43). In the same phase of the C house there was a silo (silo 69) in the courtyard, southwest of the storage pit, which was replaced by two small circular bins in B₁. These bins are, for convenience, indicated in the plan of Stratum C but their bottoms and tops all range between 492.46 and 492.78, which places them considerably above two adjacent cobblestone pavements of C, one at 492.10, the other at 492.34 (both apparently from the same period, since the terrain falls slightly at this point in C). On the other hand, these two bins lie directly under the floor of B₂ and at the foot of the flight of two steps which led in B₂ from the western half of the house to the eastern half. The level of the floor of B₂ in the western part of the house is approximately fixed by the steps (493.17 and 493.34) and the flat stone over silo 43 at 492.96-493.00, at least in SE 12B-3. On the east side of the house in B₂ the floor-level rose about 85 cm. between C₂ and B₂ to a point averaging a few centimeters above the top step in SE 12B-3. The two pavements of the Iron Age in SE 13B-1 run under two broken walls, one of which stands in clear relationship with the steps of B₂. They accordingly belong to an earlier phase of the B house, antedating the construction of the wall of B₂ which separates SE 12B-3 from SE 13B-1, as is conclusively shown by the fact that the foundation of the latter (at 492.88) is on a level with the top of the broken pavements (492.85-90). In short, the Iron-Age house of B₁ resembled the L. B. house (TBM II, Pl. 56) more closely than did the B₂ house. There can, accordingly, be no doubt that the first occupants of the house settled in the L. B. house at a time when its ruins were still standing high enough from the ground to make it worth while to rebuild the house for their purpose.

We have a very good parallel for this process in a still unpublished Iron-I house at Bethel, built on the site of an older L. B. mansion, whose walls it reused whenever practicable. A sketch-plan of the L. B. structure has been published in *Bulletin*, No. 56, p. 9, from which it will be seen that it consists of a small court surrounded by single or double rows of rooms. Around the court was built a smaller house in the Iron Age, which passed through three successive phases, each followed by destruction. The Iron-Age court was at first almost

(Wright informs me that the Philistine sherds of locus 315 [Grant ASE III, 79] belong with 412, just below). It is not necessary to suppose that these presses were intended for grapes, since small quantities of olives are still pounded with pestles to reduce them to oil (Dalman, ASP IV, 201 f.), and were trodden or pounded with pestles in antiquity for the same purpose (*ibid.*, 207, 221). Since grapes would spoil in a few days, whereas olives can be kept for a long time and yield oil more easily after ripening longer, the olive-press theory is much more satisfactory from every angle.

identical in extent with the court of the Bronze Age, and two of the exterior walls of the L. B. house were reused as exterior walls in the Iron Age, the remaining two exterior walls of the latter following the lines of interior partition walls of L. B. Along the south and west of the court the old L. B. living quarters continued in use as rooms, though differently partitioned. During the second and third phases of Iron I the size of the court was enlarged at the expense of living quarters. Just as at Tell Beit Mirsim we found at Bethel that Israelite house construction was relatively massive but lacked the technical skill displayed in Canaanite construction. It is scarcely surprising that at T. B. M., on the edge of the Shephelah, buildings were better built in the twelfth and eleventh century than at Bethel, in the heart of Mount Ephraim. That the two houses belonged to the same general type is illustrated by their comparable dimensions, cir. 15 by 15 m. at T. B. M. (the second dimension is conjectural, since we do not know the exact extension of the building toward the north) and cir. 17 by 12 m. at Bethel.^{8a}

10. The most interesting extant constructions of B₂ inside the city are the long, narrow rooms in SE 13 and 14B (cf. Pl. 41, a; 42, a). Originally there seem to have been just two of them, both built with well-constructed double walls. At an early period of A, scarcely later than the ninth century, the number was increased to four by building new longitudinal walls (cf. Pl. 33, a); but since low-level doors were now opened in both ends of the original rooms, whereas there were no such doors in their precursors, we cannot safely ascribe the same use to them, in spite of their suggestive form. About the original purpose for which this otherwise impractical kind of chamber was built there can be little doubt. The discoveries at Boghazköy have proved that rooms of comparable proportions were built there in great numbers, parallel to one another wherever possible, in order to serve as store-houses. All these structures at the Hittite capital date from the period between 1500 and 1200 B. C. (cf. Puchstein, *Boghazköi*, Pl. 34, etc., for over eighty of these rooms grouped around Temple I; cf. also K. Bittel and R. Naumann, *Boğazköy*, II, Pl. 8, etc.). Building D on the Hittite acropolis had, e. g., at least seven parallel rooms, each 32 m. long and 4 m. wide (inside dimensions). Our rooms measure cir. 6.00 by 1.70 (+) m. inside each. It is difficult to see what other purpose they can have had. It can, moreover, be scarcely accidental that we have a number of Palestinian buildings composed of parallel rooms of comparable proportions, all dating from about the tenth century B. C.

^{8a} Wright happily compares the contemporary house of Stratum III at Beth-shemesh (ASE V, 52 f. and Fig. 6; ASE IV, Pl. X, VIII: 5; ASE I, Pl. XXV), which is similar in dimensions (13 m. by 13 m.), plan, construction with large rough stones, and lavish use of stone paving for covered rooms.

These buildings (cf. examples in Fig. 2) have become known by the ambiguous term "hillani," which may have a certain justification in the history of architecture, but can have little in respect to function (see below, § 35). The standard form is given by the plan (No. 1) of the "temple" of Tell en-Naṣbeh (TN 1, 31), which has four such rooms, characteristically disposed to yield the maximum of constructional economy and solidity without changing the dimensions of any single room appreciably. These rooms measure 7.50-

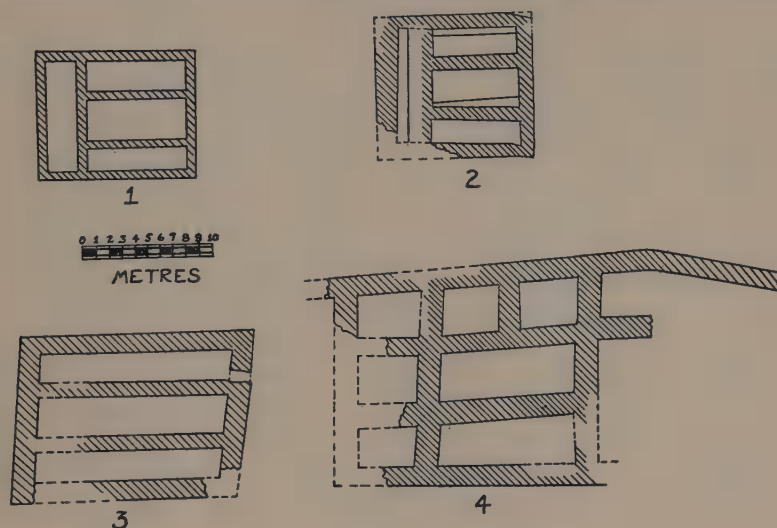


FIG. 2.

8.50 m. in length and 1.80-3.00 m. in width. The date of the building from Tell en-Naṣbeh is not known, but its relation to the city-wall of the early ninth century is such (cf. MAB I, 193) that it may well be contemporary. Two similar structures were later discovered further north on the site; one of them, for the plan of which I am indebted to C. C. McCown, was perhaps an official residence or a public building of some kind; see below, § 35, for a brief discussion. At Tell Jemmeh (Gerar) in the extreme south Petrie excavated a building of the same type (for its probable original plan, before reconstruction, see No. 2 in Fig. 2), belonging to the stratum of the "XXIInd Dynasty" (*Gerar*, Pl. IX, ET-EW-EY). As has been shown elsewhere (cf. TBM I, §§ 98 ff.), Petrie's chronology was substantially correct *at this point*, and there can be little doubt that the foundations at level 189 were actually laid after Shishak's conquest of southern Palestine about 918 B. C. (see n. 13 below).

The Gerar building may then have been erected at the end of the tenth or the first half of the ninth century. The Beth-shemesh structure (Fig. 2, No. 3) has three parallel chambers and no transverse chamber; inside measurements are 14.00-14.50 by 2.00-3.00 m. This building is dated by Wright (ASE V, 68) in the first half of the tenth century, since it is unquestionably a structure belonging to Stratum IIa. Fig. 2, No. 4 is the "hilani" of Jericho (Watzinger, *Jericho*, Pl. IV and pp. 67 ff.), which seems to be a blend of store-room with casemate construction; at all events it belongs also to the tenth century, as shown by the pottery found in it (see above, § 3). Five years ago the late J. L. Starkey discovered a structure apparently similar to the Beth-shemesh building at Lachish; there were five parallel rooms, all long and devoid of secondary cross-walls. Starkey explained it happily as a "government store-house" from the early monarchy (see PEQ, 1937, 237). Loci 6 and 7 at Megiddo form two long rooms (inside dimensions 9.50 by 2.40 m.) which were full of pottery when found by Fisher, who correctly called them "store-rooms" (MF 68 ff.). On their Solomonic date see below, n. 10. The same view of the purpose of these structures has subsequently been expressed by Wright (*Biblical Archaeologist*, I, 4, p. 28) and is certainly correct in principle. Their form is related to their function as store-houses: thick double walls and deep foundations were necessary to insulate as far as possible against moisture, and the long narrow design, like that of modern American farm granaries, helped to keep grain from mouldering.⁹

11. Since the East Cave (Pl. 10) was in use as a magazine and perhaps as a sheep-fold in B, though originally intended as a Bronze-Age necropolis, we may describe it here. We discovered the original entrance of the cave in SE 52 (see caption at locus just outside of the city-wall opposite SE 51A-9, Pl. 5), May 4, 1926 (see APB 72 f. for the attendant circumstances and a charac-

⁹ There can be little doubt that the Old-Assyrian word *bīt ḥubūri* (Hurrian and Middle-Assyrian *bīt ḥiburni*) was used to designate a storehouse of similar type. Schroeder has proved that the *bīt ḥiburni* was a storehouse for grain (ZA 35, 49) and the Ugaritic texts use *bṯ ḥbr* (*bētu ḥubūri*) in exactly the same way (we must render Keret, lines 172 f. "he made ready grain [*'akl* as in Gen. 42:7, 10, etc.] from the granaries [*qryt* is plural of the word corresponding to Accadian *qarītu*, "granary"], wheat from the *bṯ ḥbr*!). For recent literature on the subject see *Studies in the History of Culture* (Leland Volume), p. 36, n. 80. In the account of his construction of a *bīt ḥiburni* in Assur Shalmaneser I (Weidner, *Altor. Bibl.*, I, 136) in the early thirteenth century says that he built the inner wall ten bricks thick and the outer wall five bricks thick, obviously in order to provide the greatest feasible amount of insulation against moisture and vermin. Our buildings were, however, presumably no longer called by this term, which means literally "community house," but rather *miskēnôt* (from Accadian *maškanāti*, "threshing floors, granaries") as in I Kings 9: 19, referring to the tenth century.

teristic anecdote). At some time in the Middle Bronze, before the construction of the city-wall and gateway of Stratum D (TBM II, § 37), access to the cave was gained by means of a pit lined with a semi-circular retaining wall (Pl. 10, bottom), over which later ran the D foundations of the great bastion protecting the East Gate. The debris in this pit contained nothing later than MB IIB sherds. In some subsequent period the original entrance to the cave collapsed, so that we had to break away a quantity of stone from a resulting cleft in the rock in order to get inside the cave. However, the cave continued in use as a necropolis—in fact it may have been rediscovered by the builders of the D wall, who cleared away previous burials in order to adapt it for their purposes. The original entrance hall (the east arm in the plan) was found to be nearly full of debris containing a good many whole and partly preserved vases from the end of M. B. II, L. B., and Iron I, including two Philistine vases (TBM I, Pl. 49: 2, 5). There can be little doubt that most of these vases belong to the debris of discarded burials of the period 1600-1050 B. C., which were removed from the main cave and thrown into a corner. Besides the vases from old burial deposits were found many sherds and broken vessels from Stratum B, indicating that the cave continued in use for other purposes (or was rediscovered after abandonment) as late as the tenth century—probably to the destruction of B near the end of the tenth century. A single small vase, found intact on the surface of the ground in the middle of the cave, seems to suggest later intrusion; it is an elongated juglet illustrated below, Pl. 26, B: 3, which may belong to the ninth century. The excavated portion of the cave extends in both the north and south chambers to the dotted bands in William Gad's plan; it was not considered safe to dig any farther, owing to the presence of dangerous crevices and partly collapsed places. Twenty meters west of the original opening and a few meters south is a staircase formed by massive stones; two well-cut steps were still in position. These steps led to a doorway in the rock, now blocked up with stones and debris. Two blocks of masonry about 70 cm. thick, one in each large chamber, must remain enigmatic. Nor is it clear when the walls of the passage on the lower left of our plan were widened, though the widening was obviously done without any attempt to clear the passage of debris. Crude bins and cupboards made of loosely piled or laid stones, gave some idea of the practical purposes to which the old necropolis was put by the Israelites before they abandoned it entirely.

12. Objects other than pottery were not abundant in Stratum B, owing partly to its sparse occupation and the rustic simplicity of its inhabitants, but partly to the character of the final destruction (cf. APB 113). Fertility figurines make up the most interesting group of objects. The most important type exhibiting a naked woman on the verge of parturition, a type apparently

restricted to this period, is represented by five examples, all of which reflect an identical original, though all are made from different moulds. One is intact and another is virtually complete; for drawings see TBM II, Pl. 26: 6-10 (No. 6 = S. N. 1387, 7 = S. N. 1120, 8 = S. N. 1208, 9 = S. N. 1522, 10 = S. N. 1227) and for photos of three pieces see below, Pl. 55: 1-3. There can be no doubt about the B dating, since four of the five were found in debris of the B level, containing only B sherds, and only one was discovered in mixed debris (G-A). Moreover, the crude execution precludes a date in Stratum C, the only other possibility, and the clay is characteristically B in type. It is very regrettable that we cannot assign these remarkable figurines to a definite phase of B, since their close resemblance to one another compels us to restrict their chronological range to a comparatively short period. The meaning and function of these figurines have been described and parallels have been cited elsewhere; see especially my remarks JPOS, 1931, 123; APB 109 f.; *Mélanges Dussaud*, I, 119; ARI 114 f.

Two other plaques (TBM II, Pl. 28: 6 = Pl. 25: 6 and 28: 7 = 25: 7) carry on L. B. traditions, though I cannot identify either type precisely. The first one (S. N. 553) represents a nude female with upraised arms and may thus be a variant of the familiar type with the spiral ringlets (which I have called "Qudshu"; cf. ARI 75 f. and references there); it is mainly interesting because the vagina is drastically reproduced by punching the vulva with a pointed tool before baking. Date in B is inferred from the fact that the plaque was found in B debris, but it may possibly have been intrusive; I should be inclined to consider it as dating from the thirteenth or twelfth century. The second plaque (S. N. 578) was discovered in the East Cave (see above, § 11) and may, accordingly, belong to Stratum C, though the technique and especially the clay and color incline me to prefer a date in Iron I. I have elsewhere suggested that the two horizontal ridges across the stomach may indicate rolls of fat (*Mélanges Dussaud*, I, 119), but I now prefer to derive the type from an ultimate Aegean source, since the "folds" are much more likely to go back to a thick belt wound twice around the waist, according to a custom well attested on Minoan statuettes of maidens and youths (e. g., Bossert, *Alt-kreta*, Figs. 102, 103, 117, 141 f.). What the artist who made the mould for our figurines thought he was doing, is naturally an insoluble question.

13. In silo 6 (11th-10th centuries) was found the torso of an ointment vase in the form of a partly nude woman hugging a dove with outstretched wings to her bosom (TBM II, Pl. 28: 8 = below, Pl. 32: 17). The date is certain; see above, § 2 and TBM I, §§ 85-6, and note that the date can be limited with high probability to the tenth century, since a fragile object of this kind would have been smashed if it had been knocking about for an

appreciable time before the silo was abandoned and allowed to fill with debris. On the excellent technical craftsmanship shown in the manufacture of this object see Kelso and Thorley, below, § 101. There can be little doubt that the piece was imported from Cyprus, where the dove-cult of the Paphian Aphrodite goes back into the second millennium. I have nothing to add to the comparative treatment sketched in APB 110 f.; it may be noted in passing that our tenth-century date is of importance for Mediterranean chronology.

14. In Pl. 29:1-5 are grouped several miscellaneous examples of plastic and graphic art from Stratum B. No. 1 (for photo see TBM I, Pl. 40:1) is painted in dark red on a thick-walled sherd (1-2 cm. thick) covered with a burnished brown slip. It was found in B debris and its technique is characteristic of Iron I, so a date about the eleventh century B. C. may be regarded as certain. The curious beast intended by the artist is pretty clearly related to the so-called "Schlangengreif," or snake-griffin, otherwise known as the dragon of Babylon, Accadian *mušḫuššu* (formerly called "sirrush," etc.); cf. APB 112, and for illustration and description of the sixth-century Babylonian dragon see Koldewey, *Das wieder erstehende Babylon* (1913), pp. 46 ff. and Figs. 31-2. For still closer parallels in detail one may compare the dragon of Anu as represented on the Sennacherib relief of Maltai (Bachmann, *Felsreliefs in Assyrien*, 39 f. and Pl. 26-28, 30). On the Sham'al stela of Esarhaddon (*Ausgrabungen in Sendschirli*, I, 18, Fig. 4, and Pl. I), however, the same god is shown standing on the dragon of Marduk and Asshur (cf. the left-hand beast under Asshur in both reliefs). The beast under the fourth deity (Anu) at Maltai has the head of a serpent with a pair of vertical horns (not the head of a griffin without horns as shown in older drawings, e. g. in AOB², Fig. 335), and both its front feet and its hind feet *appear* to be furnished with eagles' claws, whereas the dragon of Asshur has lions' paws in front and eagles' claws behind. The type in question may be traced back to the first half of the second millennium in Babylonia (AOB², 107 and Fig. 370), and our T. B. M. example may probably be traced back to still unknown L. B. derivatives from the Babylonian source. Common to both are the shape of the body (assimilated in our example to bird form by the bulging breast), the four legs (note the beginning of a leg at the left edge of our sherd) ending in birds' claws. Our example has modified the shape of the head until it looks like that of a bird turned backward, as indicated further by the open bill and by the substitution of two drooping plumes(?) for the two upright horns; the duck-bill-like appendage at the back of the head may denote wattles and may go back to the spiral object behind the head of the Babylonian dragon. Egyptian analogies exist (cf. AOB², Fig. 392) but are more remote. Absence of wings makes it difficult to identify our beast with biblical *šārāf*, "serpent, winged serpent being

(seraph)," but that it belonged to the same general class is probable enough (note that a "winged serpent" is *šārāf m^oôfēf*, so the seraph itself was perhaps not necessarily winged).

The class of object to which our sherd belonged is now well known. As indicated by the thickness of the sherd, which varied between one and two cm., as well as by its roughly cylindrical curvature, it came from the wall of a cult-stand of a type familiar from Beth-shan and known from many other sites in Palestine (Rowe, FCTB 36-54, with full references to literature before 1928; Albright, ARI 215 f., n. 58; TBM I, § 42; *Bulletin*, No. 58, 28 f.). Animals are frequently represented in just the same sketchy drawing on cult-stands of the twelfth-eleventh century; cf. FCTB, Pl. XIV: 2, XV: 4 (both birds; for the revised chronology see Wright, AJA, 1941, 484 f.); JPOS, 1926, 167 (for the chronology see JEA XIV [1928], 285 f., with the revisions just indicated).

15. The bulls' head, Pl. 29: 2 = Pl. 55: 5 and Pl. 29: 3 = Pl. 55: 4, belong to animal vases; both were discovered in debris and 29: 3 may belong to Stratum C rather than B. The former (29: 2) is described in detail below, § 93, on S. N. 1229. The latter is relatively more thinly walled and has a simple buff surface without a slip. The incised technique used to portray wrinkles around the eyes is noteworthy. The bull's leg, Pl. 29: 5, is fairly well moulded; its B provenience is certain. All three pieces belonged to imported vases; the clay is not local in appearance and there is nothing local about the execution of any of the three. For convenience we may also describe the object Pl. 29: 4, from B debris. It is a bone whistle(?), originally more than 8 cm. in length, with a woman's head carved at one end. The face has pretty well disintegrated, leaving only hints of eyes and mouth; one ear and the incised headdress are intact.

16. To the class of cult objects belongs unquestionably the piece shown Pl. 55: 13, which is the top of a limestone house-altar with four rounded "horns" at the four corners of the top. This piece, which is only 11 cm. high and about 8 cm. wide, but must have been originally at least twice as high, was discovered under the foundations of A walls in SE 33 (1928), near the city-wall. A date prior to the construction of the wall in B₃ is suggested by objects found near by, including a broken black-burnished juglet with disk-base (S. N. 441, unpublished), of the same type and dimensions as the vases from Megiddo V illustrated *Megiddo*, I, Pl. 5: 129, 130 (the former is also black-burnished and has a similar spherical body also 6.5 cm. in diameter). We may date the altar-top approximately in the eleventh century B. C. Traces of red paint suggested that it was originally painted, presumably in some simple pattern. That it was a crude local effort is indicated by its cross-section,

which is a trapezium 8 by 7 x 9 cm. The closest parallel to our altar is a considerably larger one, with the same shape and equally crude in execution, which Macalister found built into the foundations of a structure in Gezer, Stratum V (G II, 424). His statement that the structure in question dated from about 600 B. C. is very misleading chronologically; Stratum V was characterized almost exclusively by tenth-century pottery and was followed by a gap of several centuries during which the town was abandoned, aside from a few buildings of the seventh century. The fact that the Gezer altar was built into the foundations of a house in this stratum then indicates a date for it before the middle of the tenth century, in remarkable agreement with the evidence of our stratification. This crude early form seems to have been supplanted (at least in some places) before the end of the eleventh century by a new type, familiar to us from Megiddo IVB¹⁰ and Shechem (see especially

¹⁰ The building near which these altars were found (10 in PQ 13), is attributed by May (MRMC 4 ff.), as well as by Lamon and Shipton (*Megiddo* I, 3) on ceramic and architectural evidence, to Stratum V. The stratigraphic evidence proves that the structure must in any case antedate the city-wall, which itself appears to date from the beginning of IVA, in the late tenth or better the early ninth century (see above, n. 6). On the other hand it is built over masonry (loci 586, 592, etc.) which is confidently attributed by the excavators to Stratum V. The most natural stratigraphic conclusion is then that Building 10 belongs to Stratum IVB, the Solomonic level (*Megiddo* I, 11 ff.), which would certainly be expected in Area C as well as in B. The pottery of the principal loci of Building 10 (especially 6 and 7) is indeed characteristic of the tenth century, but it does seem to have a number of relatively late Iron-I types (e.g., jugs 124-126, which also occur in IVB and are distinguished by the pointed base from really characteristic juglets of Stratum V, like type 128). A Solomonic date would, accordingly, be preferable from the ceramic as well as from the stratigraphic point of view. This revision of the excavators' attribution is in no way intended as a reflection on their skill; it is very hard to determine the stratification of isolated structures except with the aid of pottery (cf. our own past uncertainty with reference to SE 23B-8, above, § 3). The three limestone altars described by May (MRMC 12 f.) were discovered by Fisher south of Building 10 and north of the contemporary Building 1A (MF 70). Like the pottery in loci 6 and 7 of Building 10, the altars had been through a great conflagration, in which this phase of occupation met its end. Guy and May have corrected Fisher's impression that the fire occurred after the second of two successive phases of occupation (MF 69 f. and MRMC 7, n. 27). The fire in question is doubtless the same conflagration that destroyed the palace of IVB (see Watzinger, M II, 59), whose attribution to the reign of Solomon appears to be practically certain. This fire may safely be ascribed to the invasion of Shishak, when Megiddo was undoubtedly stormed and occupied (cf. below, n. 14). We may, accordingly, with great confidence attribute the limestone altars to the time of Solomon, Stratum IVB. We accordingly agree with May (MRMC 6 ff.) that the altars belong to Stratum IV, but on partly different grounds. We cannot, however, separate the altars from the main occupation of Building 10; both belong, not to V with Lamon and Shipton, nor to IV and V with May, but to IVB.

After reading the above, Wright studied the Megiddo evidence in detail, and wrote

Building 10 is in Q13
10 II B
IVB
The 3 altars were in
R12 (MRMC, pl. XII)
MEI p. 148) i.e.
2 w - 12 m - 1
10 m - 12 m - 1

May, MRMC 12 f. and Pl. XII). The earliest examples of this more developed type were found in 1935 in a temple of Megiddo V (ILN, June 20, 1936, p. 1111, Fig. 15), the contents of which certainly belong to the period which ended about 975 B. C. (see n. 1 above, and observe that a number of imported Cypriote vases identical with pieces from Hawam III [above, n. 2] were found in the same temple). On the question of the identity of these altars with the biblical *hammânîm* see now the articles of H. Ingholt, *Mélanges Dussaud*, II, 795-802 and K. Elliger, ZAW, 1939, 256-265. There can be no doubt that the type in question came from Mesopotamia or was strongly influenced from that direction. In Assyria during the early first millennium we find both this same horned altar (e. g., Thompson, *Archaeologia*, LXXIX, Pl. LVI: 335 [cf. p. 108, D. 7], a limestone model only 6-7 cm. wide) and the closely related "battlement-altar" (Zinnenaltar), on which see Galling, *Der Altar*, pp. 45 f. and Pl. 9. Moreover, both types may include the concave bowl (circular in the model from Nineveh discovered by Thompson). The horns served a dual purpose: to support the bowl of incense, which was presumably of pottery or copper, and to symbolize a temple-tower (ARI 152, where the conceptual background is dealt with). This type, with or without the sculptured basin, had a long history in Hellenistic and Roman times; see Deonna, *Bulletin de Correspondence Hellénique*, LVIII (1934), 381-447.

17. Only one fragment of inscription was discovered in Stratum B—the inscribed sherd published below, Pl. 60:1 (for drawing see TBM I, § 98), which is in my hands as I write. One complete letter (*kaph*) and a fragment of the shaft of another were preserved. Prolonged search on the spot, as well as in the debris which had been thrown out already, failed to reveal any additional fragments, to our great disappointment. It was found between the foundations of the casemate wall of B₃, in SE 24B-7, in a mixed context, containing B and C sherds. In 1930 there was no thought of possible Late-Bronze alphabetic inscriptions, so we took for granted that the sherd belonged

me on Nov. 22, 1942, that he agreed entirely with my attribution of Buildings 10 and 51 to IVB, and to their Solomonic dating. Wright shows that jugs 129-133, which are typical V pieces, do not appear in 10 and 51. He further writes: "One of the best criteria is the dipper juglet with pinched mouths, No. 138-142. 21 loci are listed as containing them, and all but one or two are V loci. This type occurs in Beth-shemesh IIa. . . . This and other reasons make it rather clear to me that V is roughly contemporary with IIa, while IVB is later than IIa. The juglets with small flat base (Megiddo 129-133) are Beth-shemesh III. The small juglets with round bottoms, jugs 128 and 134, appear only in IVB, while nos. 135-136 (ridged-neck types like Jericho, pls. 35: A 36 and 37: B 6—found in the *hilani* at Jericho) appear only in V loci. Incidentally, this indicates that the Jericho *hilani* is probably Davidic and not Solomonic or of Hiel."

to Stratum B. It must, however, be stated that the paste of the sherd (which was part of the shoulder of a wine-jar or amphora of some kind, varying from 11 to 6 mm. in thickness) could belong to the end of L. B. as well as to early Iron I, i. e., it could date from almost anywhere between cir. 1250 and 1100 B. C.^{10a} The form of the characters agrees with this general date: the curved base of the archaic *kaph* does not resemble the pointed forms of the eleventh-tenth-century inscriptions hitherto known from Byblus and other sites (on their date see most recently my observations in *Studies in the History of Culture* [Leland Volume], pp. 34 f., n. 78, which supersedes previous discussions, e. g., in *Bulletin*, No. 73, 11 f.), for which see especially Dunand's table, RB, 1930, 328. On the other hand, the precision of forms, the stance, which slants toward the left, and other elements forbid us to combine this inscription with the 14th-13th-century group known from Lachish, Beth-shemesh, Byblus and Megiddo. Our former date in or about the tenth century (*Bulletin*, No. 39, 8; JPOS, 1931, 123 f.; APB 107; TBM I, 74) is in any event to be surrendered in favor of a probable date about the twelfth century, in which case it belongs chronologically, we may safely suppose, with the archaic graffito on a fragment of shallow bowl from Tell el-Hesi, which I have discussed AOF V, 150 ff., and *Bulletin*, No. 63, 9 and n. 2 (where I have proposed the twelfth century).

18. Few seals were found in Stratum B. The only interesting piece is S. N. 1407 (Pl. 29:7), which was found in SE 23B-8 and thus belongs to B₃, before the end of the tenth century (cf. above, § 3). This seal is a perforated scaraboid of red marble, showing a man standing between two ostriches, which he grasps by the neck. A close parallel to this group is seen on a scaraboid from Beth-shemesh, Tomb 1 (APEF, II, Pl. XXIX B, lower left), which belongs to the end of the tenth and the beginning of the ninth century. To the same period belongs a rude basalt scaraboid from Stratum V (cf. § 16, above) at Gezer (G II, 326, No. 314; III, Pl. CCIII a; 15) with the same group, more sketchily executed and somewhat smaller. To Stratum V (Fourth Semitic) Macalister also ascribes another scaraboid of jasper better made but only 1.25 cm. long, with the same tableau (G II, 328, No. 372; III, Pl. CCVIII: 57). Megiddo yields an octagonal button seal of limonite, bearing the same representation (*Megiddo* I, Pl. 73:8), found on the surface. The motif was probably of Syrian origin; it spread to Mesopotamia, where it became popular in cylinder seals not later than the eighth century (seal of Urzana of Muzazir, etc., Ward, *Seal Cylinders of Western Asia*, pp. 203 ff. and Nos. 589-

^{10a} After careful comparison of textures, Kelso writes: "The paste of the sherd is typical L. B. in comparison with what we have here in native ware (especially wine-jars). Nevertheless there are a few sherds of somewhat related texture in Iron I. The odds favor L. B."

591).—Two other seals which may be attributed with some confidence to B are shown on Pl. 60: 7 (a rude scaraboid of limestone) and 9 (the impression of an even ruder stamp-seal of pottery, shaped like a conoid with one end circular and the other end elliptic and perforated, 2.2 cm. long and 1.8 in diameter). A third seal (Pl. 29: 13) is a small scarab of cobalt blue paste, which perhaps belongs to Stratum A.

19. Two pieces of circular rosette inlay, Pl. 60: 10 (ivory, half preserved) and 13 (bone, intact) both seem to belong to Stratum B, but No. 10 may belong to C, since it was found in mixed debris from B and C. There are excellent contemporary parallels. *Megiddo Ivories*, Pl. 13: 55, 56, 58 have the same basic pattern of a rosette with twelve petals, made by twelve intersecting arcs, and surrounded by three concentric circles, but they have additional elements lacking in our piece; they average twice as large. Identical with Megiddo, No. 58, both in pattern and in size is an ivory disk from Bethshemesh (ASE LIX: 27), attributed by Grant and Wright to Stratum III (cir. 1200-1000 B. C.). Since the Megiddo pieces date from the first half of the twelfth century, with possible backward extension in the case of a few ivories, this three-way chronological agreement is significant. On the other hand, our rosette has exactly the same pattern as the slightly larger piece from the latest fosse-temple at Lachish (*Lachish II*, Pl. XIX: 18); the latter is not a piece of inlay but the entire lid of an ivory toilet box, with the two perforated ears by which it was fastened in place. Since the third fosse-temple dates from the thirteenth century, a date at the end of C is thus perhaps equally possible typologically for our piece. *Megiddo I*, Pl. 99: 8, from Stratum V, cir. 1000 B. C., is already much more complicated, with 24 petals, a guilloche and two sets of concentric circles. The disks in question were undoubtedly set in the lids of toilet boxes, like the Lachish example just cited, as well as *Megiddo Ivories*, Pl. 13: 54a, 57 and *Megiddo I*, Pl. 77: 7, etc.—The bone inlay with sixteen petals (Pl. 60: 13) closely resembles *Megiddo Ivories*, Pl. 13: 57, both in pattern and size, except that the latter has two ears. The design is also repeated, e. g., in *Megiddo Ivories*, Pl. 27, inside and outside of an ivory plate.

20. Objects of metal were infrequent and nearly all of them were of copper or bronze; iron was comparatively rare, though a number of broken pieces were found.^{10b} Two bronze plow-tips were found (Pl. 62: 1, 4), the former nearly 15, the latter nearly 12 cm. in length. Both had been badly blunted by the exacting use to which they had been put. Bronze plow-points were never very practical and it is doubtful whether they were employed at all except in the last quarter of the second millennium. In the eleventh century

^{10b} Note three broken iron sickles (S. N. 620-22), all shorter and thinner than later examples.

iron plow-tips came into use and iron displaced bronze for all tools soon afterwards (see especially Wright, AJA, 1939, 458-463, with whose chronology I concur throughout).—Pl. 62:2 is a long, tapering bronze tool, folded over at the broader end for hafting, but broken off at the narrower end (now 11.3 cm. long). It was found in the first day of excavating under the floor of the court of the West Tower (NW 33A-14) in mixed debris, with B sherds prevailing. An almost identical bronze object comes from Tomb 661 at Tell el-Fâr'ah (TF I, Pl. XXVI), much better preserved and still 15.5 cm. long; there is no sound basis for Petrie's view that it was a spear-butt. The date of the tomb is uncertain, but falls somewhere between 1150 and 1000 B. C. The most plausible functional explanation is that it was the point of an ox-goad, like the similar tool published in *Megiddo* I, Pl. 83:21, which is somewhat larger and is attributed to the eighth century (Stratum III), but is perhaps earlier. This explanation is strongly supported by I Sam. 13:21 (on which see Bewer's masterly treatment, JBL, 1942, 45 f.) where the Israelites are said to have been forced by the Philistines, toward the end of the eleventh century, to resort to them in order to buy plow-points, to sharpen axes, and to straighten (*l'haššîb*) the tips of ox-goads. The word *dorbân* or *darbôn* was used to designate such a metal tip put on an ox-goad (*malmêd*). It is interesting to recall that Shamgar is said to have slain hundreds of Philistines with this tool, toward the end of the twelfth century (Jud. 3:31). His ox-goad was presumably furnished with a bronze tip like ours.—Pl. 62:3 is a narrow tool with a bulge in the middle; I do not know its function. Pl. 62:4 is a bronze plow-tip of characteristic shape. Pl. 62:6 is a javelin-head, from B or A₁; 62:11 is a bronze arrow-head. Pl. 62:10, from silo 3 (TBM I, § 78), is a complete socketed spear-head of bronze, 19 cm. long, with a socket almost half as long; its date in the eleventh century B. C. is apparently fixed by its provenience. Almost identical in form, though a little longer (23.5 cm.) is a spear-head from Tomb 960 at Tell el-Fâr'ah (TF II, 25 f., Pl. LV) belonging to the first half of the twelfth century. Closely parallel in shape and size seems to be a socketed spear discovered by Engelbach at Riqqeh in Middle Egypt, in a deposit whose date during or after the reign of Ramesses II is said to be established by traces of the cartouche of the latter on a spear-head of similar type (Engelbach, *Riqqeh and Memphis* VI, 1915, p. 15a and Pl. IX-X:7). It may be observed that some cartouches of the later Ramessides imitate that of their great precursor so closely that the group may belong to the twelfth or even to the early eleventh century. On the socketed axe-head see in general Petrie, p. 31.—Pl. 62:7-8 are characteristic copper bracelets.—Two bronze fibulas were found in Stratum B. One (S. N. 501 from silo 6), which cannot be later than the middle of the tenth century (Pl. 32:20), is folded over at one

end as a safety catch; the other end is hollow, with an aperture leading from the hollow end to the outside. How it was used may be seen from a bronze fibula of the same type (though a little fancier in design) from Tomb 221 at Tell el-Fâr'ah (TF I, Pl. XLI: 295), which is shown by the pottery to date from about the tenth century B. C.: a slender bronze rod, not quite so thick as the fibula proper, runs through the aperture, where it is held in place by a bent end, and out of the hollow end of the fibula, where it is bent over to form a circular eye. The pin must have been fastened to this eye by a curved blunt end, just as in the pin of Pl. 63: 39. The latter (S. N. 1112 + 1113) was found in B debris and is badly corroded, but seems to have been decorated with the usual rolls or knobs. All three bows are essentially arcs of a circle (inside radius cir. 3.2-3.5 cm. in our two fibulas, and 2.4 cm. in the example from Tell el-Fâr'ah). The carinated type characteristic of the ninth-seventh centuries (e. g., *Megiddo* I, Pl. 78-9, mostly from Stratum III and II, cir. 800-600 B. C.), often with an iron pin, had not yet come into use; the transition is illustrated by a fibula from the late tenth or early ninth century (*Megiddo* I, Pl. 78: 20 from IV filling); cf. also M II, 51, No. 2. No light is shed on our particular question by the material collected by Macalister, G II, 79 ff., though the arc form of bow is attested twice for Stratum V (cir. tenth century) by his examples.—The broken bail-handle from B (or possibly A₁, to judge from the pottery context) shown on Pl. 63: 33, is a fairly common type.

21. A few unimportant objects from Stratum B may be described briefly in this section; they are selected from a much larger number which was excavated. The most interesting beads from this period are illustrated and described in TBM II, Pl. 39¹¹ and § 82; these small and elusive objects are extremely poor indices to the stratification of a site like T. B. M., and they became extremely inferior in quality in the Iron Age, when compared to Bronze-Age examples.—On Pl. 32 Nos. 18-22 are whorls and buttons from B stratification. Nos. 21-22 are in poor stratification and may go back to L. B., where the type in question was still common (TBM II, § 64), after its apogee in M. B. Since several other examples turned up in B context (TBM II, Pl. 38: 8, 13-18, 26),¹² it is probable that the type continued in use well into B.

¹¹ Since the serial numbers of the beads from Stratum B are not given as a rule in the index, TBM II, 95 f., we may list them here for convenience, with brief descriptions:—39: 6 = 1272, dark green scaraboid; 9 = 1111, rectangular glass bead with stripes of varying colors; 19 = 1284, carnelian bead; 20 = 1438, ditto; 29 = 1439, barrel-shaped blue faience bead, faded to white. All of these beads except No. 9 are of reasonably certain provenience.

¹² Following are the serial numbers, where not listed in the index, TBM II, 95:—14 = 1543; 15 = 1150; 16 = 1324; 17 = 1291; 18 = 1274; 22 = 1212; 24 = 1432; 26 = 1077.

It is significant that very few true examples of the type were found in Megiddo, Strata IV-I (*Megiddo* I, Pl. 93-95), and one may reasonably expect that they are intrusive or out of context. At all events they become more frequent in IV filling and V, pointing to the eleventh or possibly the tenth century as the end of their vogue. None was found at T. B. M. in A context; the spindle-whorls of that age were usually round flat potsherds (cf. § 55, below). Our type Pl. 32:19, with convex boss and flat rim, is further illustrated by TBM II, Pl. 38:21, 22, 24,¹² two of which came from mixed B-C debris while one (No. 22) came from mixed B-A debris. In the Megiddo tombs (MT 171, Fig. 175) this type is characteristic of L. B. II and Iron I (first phase); i. e., it was popular in the thirteenth and twelfth centuries. It is by no means impossible that some of these objects were buttons (on the problem see Kate Elderkin, *AJA*, 1928, 333-345, though she exaggerates in favor of the button theory); in fact it is difficult to explain grooved specimens (as Pl. 32:18) otherwise, and the four additional transverse holes through the B example TBM II, Pl. 38:23 (shaped like Pl. 32:19 below) can scarcely be explained except as eyes for thread.—The little flat disks Pl. 63:25 (pottery) and 29 (stone) are presumably playing pieces.

22. The pottery drawn in Pl. 12 all comes from the 1932 campaign. Pl. 12:2 (= Pl. 66:4) and 9 (= 66:2 and 3) belong to Stratum C; they were found under one end of the oil-press of SE 12C-1 (so correctly in the plan, TBM II, Pl. 52) at first thought to belong to B. The stratigraphical picture is, however, perfectly clear; see above, n. 8. The cooking-pot (Pl. 12:2) is characteristic of late C, though it could perhaps almost as easily be attributed to early B; excellent parallels are found in thirteenth-century Lachish (*Lachish* II, Pl. LVI:366-8). With the deep, four-handled bowl, Pl. 12:9, compare the example *Lachish* II, Pl. XXXIX:70, from Temple III, which came to an end about 1230 B. C. (*Bulletin*, No. 74, 20 f.); the Lachish bowl is about 35 instead of 30 cm. high, but also has inverted rim and its base is identical.—Pl. 12:1 is a large fragment of a bowl with faded red painting and slightly flattened cyma profile (cf. above, § 4) from B₂ (probably); aside from the absence of burnishing it closely resembles the bowl from silo 6 published TBM I, Pl. 29:13. Both form and decoration go back to the thirteenth-century type found, e. g., in Lachish, Temple III (*Lachish* II, Pl. XLI:125). Our piece may date from the twelfth century.—Pl. 12:3, with dark red paint on buff surface, from a small B pit (unrecorded in SE 23) probably dates from the twelfth century; for the date of the characteristic design on the handle see TBM I, Pl. 25:15 and compare it with Pl. 19:1-3.—No. 4 is buff, with dark red paint; the surface is irregularly hand-burnished; it must date from about the twelfth century.—No. 5 is black-burnished; it may belong to A₁, not to B₃,

since it is later in type than TBM I, Pl. 51:4-5 (cf. above, § 3 for a comparative discussion). It was found in debris of early type under NW 31A-1.—No. 6 is an unusual lamp, creamy buff with a reddish brown band of paint on the rim. A date in C is not impossible.—No. 7 is a very unusual piece, with dark-red-to-purple slip over the entire surface, wheel-burnished in broad, irregular lines both inside and outside. Though it was found in SE 23 in an E-D context, I decided that it must be an intrusive Iron-Age vase, since the technique is like nothing else I have ever seen in M. B. II. However, it must be confessed that the form and the base are both M. B. II in character, so it is better to attribute the vase tentatively to Stratum E.—No. 8 is a bowl with cyma profile, characteristic of B₂.—No. 10 is a large jar with flat bottom, 59 cm. high, thick-walled and made of coarse clay; its context was definitely B, but I know of no exact parallel to it elsewhere.

23. As shown in detail above, §§ 2-4, the chronology of phases B₁₋₂₋₃ which was defended in TBM I, ten years ago, has proved to be correct. On the other hand, as pointed out in §§ 5-8, some modifications must be made in our first interpretation of the fortifications and their chronology (e. g., APB 101 ff.). In the following sketch I shall outline the vicissitudes of Town B and briefly relate them to the history of the country.

During the critical phase of the Israelite conquest of southern Palestine, which undoubtedly fell somewhere in the second half of the thirteenth century B. C., Tell Beit Mirsim (probably Kirjath-sepher, TBM II, 5. f., n. 7) was destroyed by the invaders (TBM II, §§ 68, 75, 87), who burned it most thoroughly. Almost everywhere our digging through B debris into the remains of Stratum C was heralded by masses of ash-filled earth. In some places there was over a meter of such debris below the foundations of Stratum B. Occupation must have begun almost immediately; as noted repeatedly since the beginning of work below Stratum A in 1928, the oldest B houses utilized earlier foundations and standing walls (see especially above, § 9, for illustrations). There is no evidence for a drastic change in the fortunes of the town until late in B₂, when the house described in § 9 was destroyed. During this period the Philistines invaded Palestine and settled in the Coastal Plain; the appearance of their pottery at our site about the middle of the twelfth century marks the transition from B₁ to B₂. It is noteworthy that the partial destruction of Tell Beit Mirsim must have been roughly contemporary with the devastation of Iron-I Beth-zur, which also took place toward the end of our ceramic phase B₂ (*Bulletin*, No. 43, 7; BZ 35 ff.). Beth-zur was destroyed before Philistine pottery and the collar-rimmed store-jar had passed out of use, but after the Cypriote black-on-red juglet (BZ 37, Fig. 31) had begun to be imported—i. e. about the third quarter of the eleventh century—which is

exactly when the T. B. M. house in question was abandoned; our evidence is almost identical in both cases. There can thus be no reasonable doubt that the Philistines devastated at least three Israelite towns after their great victory at Ebenezer cir. 1050 B. C.: Shiloh, Tell Beit Mirsim and Beth-zur. The second or third destruction of Iron-Age Bethel (*Bulletin*, No. 56, 11 f.) may perhaps be credited to the same wave of invasion; the fourth is already too late.

Not long afterwards, early in B₃, came the construction of the first casemate wall and the oldest traceable Iron-Age gateway at the East Gate. We have given solid reasons for dating the work of fortification in the early tenth century, and have called attention to the extremely close resemblance between this casemate wall and the contemporary wall of Beth-shemesh. Historically we can attribute these fortifications only to King David, cir. 975 B. C. There is nothing at all surprising in the fact that he should feel it prudent to fortify such towns against the Philistine menace, in view of their location. One may hazard the conjecture that he built the walls of Tell Beit Mirsim and Beth-shemesh during the first seven years of his reign (i. e., between cir. 1000 and cir. 990 B. C.), since the line in question lies well to the east of the boundary later established, which ran just west of Tell eṣ-Ṣāfī (Libnah), Sheikh Aḥmed el-'Areini (Gath), and Tell el-Ḥesī (Eglon).

Probably about the year 918 B. C.¹³ came Shishak's irruption into Pales-

¹³ Hitherto I have followed Begrich's chronology for the first century of the Divided Monarchy (APB 199, n. 96; ARI 211, n. 4), but evidence against it is beginning to appear. Since a detailed discussion would be quite out of place here, we must content ourselves with a few indications. First we must recall that many of the synchronisms between kings of Judah and Israel were demonstrably supplied by the editor of Kings or a precursor, who based his reconstruction on such synchronisms as were accessible in his sources and calculated the rest from his lists of kings. Exactly the same thing is now known to have been done by the Assyrian scribes who drew up synchronistic tables of Assyrian and Babylonian kings. Note the following lines of evidence pointing to the probability that dates must be very slightly lowered.

1. Arguing from analogy, it would be strange if no reduction were necessary before our earliest fixed date, cir. 842 (not later than 841) for the accession of Jehu and Joash of Judah (under Athaliah's regency). The total number of regnal years between this dated synchronism and the Fall of Samaria has had to be reduced from 165 to 120 years in Judah and from 146 to 120 in Israel, as a result of the discovery of precise Assyrian synchronisms. As the reigns of the first eight kings of Judah from David to Ahaziah total 175, one would expect some reduction in this total, *a priori*.

2. Attacking the problem from the standpoint of the average duration of a generation, we find that the ten kings of Judah who followed one another in genealogical succession from Joash to Joiakim, reigned from cir. 842 to 598 B. C. From this period of 244 years we must subtract 11, since Joiakim's son Joiachin was 11 years older than Joash at his accession. The resulting average generation is 23 years. The seven kings of Judah from Solomon to Ahaziah inclusive reigned 135 years, or 129 if we allow for antedating. To this add about 20 years, since Solomon was about twenty when he became king, whereas Ahaziah's son Joash was still an infant when his father was killed. Divide cir. 149

tine, which swept through Palestine, north and south, east and west, with seeming impartiality.¹⁴ Judah never forgot the devastation wrought by this invasion, which is vividly described by the Chronicler, five centuries later (II Chron. 12:2 ff.). Shishak's personal followers were Libyan nomads; in his great army were also Nubians and another unknown people of barbarian character. It is scarcely surprising that these hordes left a trail of devastation in their wake. Tell Beit Mirsim B came to an end just about this time, and we are entirely justified in attributing its fall to the invasion of Shishak. For the subsequent history of the town see below, § 40.

years by 7 and we have an average generation of 21, which cannot be appreciably reduced, even in a stable period in which one would expect short generations. This warns against over-reduction, especially as the longer reigns, like that of Asa, are stabilized by references to regnal years (Asa's 15th, 36th and 39th years). A reduction of over 10 years (yielding an average of 19½ years to each generation) is improbable.

3. The chronological data of Manetho, as transmitted by Africanus through Syncellus, allow 215 years from Shishak's accession to that of Shabako, founder of the XXVth Dynasty. Since the latter event cannot have taken place before cir. 710, Shishak's accession would fall about 925 B. C. and his invasion of Judah would have to be dated at least five years later. This argument is weak, since Manetho's figures have been badly garbled, even for comparatively recent centuries.

4. The Melcarth Stela of Ben-hadad king of Aram (published by Dunand, *Bulletin du Musée de Beyrouth*, III, pp. 65-76) proves that Ben-hadad I and Ben-hadad II were identical (see my discussion in *Bulletin*, No. 87, pp. 23-29). Ben-hadad died between 845 B. C. and 842 B. C. His invasion of Israel in the time of Asa and Baasha (I Kings 15: 18 ff.) can scarcely be placed much more than thirty years before. According to II Chron. 16: 1, clearly following a written source, this invasion took place in the 36th year of Asa (the 35th year is mentioned in the preceding verse), which would fall, according to the transmitted regnal years, reckoned after antedating principles, eight to nine years after the death of Baasha. Instead of ascribing this to an error of the Chronicler, it is more reasonable to reduce the reign of Rehoboam by some ten years, allowing him only two years of reign after Shishak's invasion, and compensating for the inequality in the Israelite list by deducting ten years or so from the reigns of the Omrides (as has been increasingly recognized, Ahab reigned only 20 years and the twelve-year reign allowed Jehoram by tradition is too long). Keeping the rest of the biblical figures, which cannot be appreciably wrong anywhere, we then arrive at an approximate date $842 + 80 = 922$ B. C. for the Division of the Kingdom. The invasion of Shishak falls about the year 918 B. C. and that of Ben-hadad about 879 B. C., a year or so before the death of Baasha and about 35 years before the death of Ben-hadad himself. Our data now harmonize very well.

¹⁴ Our conception of the character and extent of Shishak's invasion has been greatly changed by the discovery of a fragment of a triumphal stela of Shishak himself in Schumacher's debris at Megiddo, as well as by the discovery that the list includes a series of towns in Edom, made independently by Noth (ZDPV, 1938, 277-304) and myself (AOF XII, 385 f.). It follows that Shishak's invasion was on a much larger scale than had been previously supposed. There is no longer any reason to doubt that he conquered all Palestine by force of arms. On his probable destruction of buildings in Areas B and C at Megiddo by fire see above, n. 10.

CHAPTER II

STRATUM A: BUILDING REMAINS

24. The occupation of Stratum A was much more intensive than that of Stratum B and probably more intensive than at any other period in the history of the site. The entire area inside the walls seems to have been occupied by houses, aside from a small space just inside the East Gate but not yet delimited exactly; its existence follows from our failure to find any A walls in the two test-pits sunk in 1926 in SE 42. Maximum intensity of population seems to have been reached toward the end of the eighth century, just before Sennacherib's capture of the town (701 B. C.). Thereafter, down to the final destruction by the Chaldeans about 589 B. C., conditions seem to have tended to grow worse (cf. my remarks on stratification in § 25). During the period of maximum population the area where we built our camp, directly southwest of the town, was at least in part occupied by houses. Soundings in SW 44, in the northwestern part of the camp (TBM II, Pl. 46), brought to light foundations of house-walls of Iron II, together with ring-burnished sherds. This level area, still employed by the Arabs for their threshing floors, must have been already used by the Israelites for their *gʾrānôt*, since it is the only suitable terrain for this purpose in the environs of Tell Beit Mirsim. For the same reason it was best suited to receive the overflow of sedentary population from the town. At the height of its preëxilic prosperity Tell en-Naṣbeh also overflowed its walls; Badè discovered Iron-II house-walls on the shoulder of the hill on which the ancient town was situated, east of the latter. The same thing probably happened in many places, owing to the smallness of the area of the average walled town. In our site, for example, with a maximum area within the outer line of the city-wall of some 3 ha. (7.5 acres), the total number of houses cannot have exceeded 250, and may not have been over 150 (in APB 116 f., the area of the town was slightly over-estimated and the number of houses inside the wall was certainly reckoned at too high a figure [250-350]). Allowing for an unknown number of persons who lived outside the walls, we may estimate the entire population of the town in its flourishing period at between 2000 and 3000 (APB 116: "between 2500 and 5000"). The question of probable seasonal movement of the population to and from the walled area has been discussed briefly elsewhere (APB 117).

25. Only in a few places was it possible to make any serious stratigraphic divisions in loci of Stratum A. Almost everywhere, under the latest floor-

levels, were found thin deposits or pockets of earlier A debris, but only in comparatively few places could we distinguish superimposed floor-levels of A. In the SE quadrant, however, it was possible to differentiate between earlier and later walls of A over a considerable area, especially in squares 12, 13, 22 (see below, § 40). In SE 23A-10, for example, a dye-plant of the eighth century had been abandoned and filled in before the end of the period. In general, however, it was not possible to distinguish between the pottery found in the earlier and later houses, showing that the destruction of the former probably fell only a few years before the final catastrophe cir. 589 B. C. On the other hand, where the city-wall protected the accumulation of debris, in SE 24, 14 and 4, we found up to three superimposed floor-levels from Stratum A, though without appreciable change in the line of walls. Here there was considerable difference between the pottery of the lowest floor, which we designated as A₁ (tenth-eighth centuries), and that of the upper ones. As has been noted in other sites, we discovered that the street-level showed a marked tendency to rise more rapidly than the adjacent houses, evidently because earth and stones were piled in the street and allowed to accumulate there, whereas the house-floors were kept relatively free of such accumulation. For instance, the street in SE which runs roughly equidistant from the city-wall at an interval of 15-20 m., had its latest surface some 50-100 cm. above the latest floor-levels in the flanking houses. For the most important light on the stratification of A we must refer to the treatment of the successive phases of the West Tower, below, §§ 27 ff.

26. The city-wall of B₃ (early tenth century, in all probability, as shown above, § 6) continued in use down to the end of Stratum A. In the northwest, where it had evidently been severely damaged at the end of B, presumably by the hordes of Shishak, it was replaced in A₁ by a wider wall, described above in § 6. In general the old casemates continued in use, though more and more of them appear to have been employed as store-rooms. In SE 51 and 52, just north of the East Gate, the main wall of B₃ seems to have been destroyed before the final catastrophe and it was replaced for some time by a thin shell about 35 cm. thick (Pl. 5). At the same time the casemates in this area were abandoned and were turned into ordinary house-rooms. Whether this development is to be credited to rebuilding after the partial destruction of 598 B. C. must remain uncertain, but may be regarded as very likely. Aside from the gate-towers the A city-wall had at least one projecting tower in NE 42; see the schematic plan below, Pl. I. This tower was not excavated (except to clear the outline superficially), but seems to have been about 22.50 m. long and to project 4.50-6.00 m. from the wall. To judge from the offset in NW 24 there may have been another tower there, but the depth of debris was so great in

this sector that we abandoned our initial attempt to trace the wall by digging a narrow trench along its outside face. The glacis naturally had to be repaired at different periods, and the later work on its upper part can be easily distinguished from older work by the use of stones averaging considerably smaller in size; cf. the photographs TBM II, Pl. 16, a-b, 17, a-b. The long stretch of revetment cleared in the south of the site in 1928 (TBM II, Pl. 17, a) illustrates the wavy profile of the glacis (seen from above), which does not seem to have been originally intended by the Bronze-Age builders, but which became accentuated in course of time. In Iron II it is probable that the crests of these horizontal waves were surmounted by small projecting bastions.

27. As has already been pointed out above (§ 6), the West Tower, which straddles the broken line of the two-meter city-wall in NW 33, cannot be older than the ninth century, to the early part of which that wall belongs. Since the problem of the successive phases of the West Tower and West Gate is very complex, I have placed a considerable amount of data at the disposal of the student. For the general plan, showing all walls cleared and all significant levels, see Pl. 6, square 33, 43. For a sketch-plan showing only the walls and installations of the latest period, as they were excavated in 1926, see Pl. 8, where the exact position of Mr. Detweiler's careful vertical cross-sections (Pl. 9) is indicated. A photo of the interior of the court of the Tower, as excavated in 1926, will be found in Pl. 46, d; the main gateway of the same period is seen in Pl. 44, d, and 36, a. A view of the excavation of 1926 in progress, looking northward across gateway and tower, appears in Pl. 36, b. For the stratified substructure of the West Tower, as seen in the central court after excavation to bed-rock in 1932, see the views from different directions in Pl. 37, a-b; 38, a; 40, a. The stratification of the west loci of the West Tower appears in Pl. 38, b. The stratification of the northeast room of the West Tower (NW 33-16) appears in Pl. 39, a. Finally, there are photos showing the north wall of the Tower and the older revetment across which it was built in Pl. 39, b, and 40, b. We devoted great pains to methodical excavation and recording of the West Tower, in view of its remarkably interesting history, which we can at best only sketch in broad lines, owing to the paucity of evidence.

In 1932 we were able to distinguish four successive phases in the West Tower, with suggestions of a fifth (later abandoned for want of adequate evidence). Phase alpha (for detailed description see below, § 30) was the latest; it was very well preserved except along the outer west wall, where only fragments were found intact. The pavement of the court, NW 33-14, varied in level from 487.53 near the east end to 487.43 near the west end, where the floor had sagged owing to the absence of solid buttressing from the west. Room 33-16, north of the court, was paved at the same level as the east end of the

adjacent court. When we cleared away this pavement we found traces—but only traces—of a slightly lower pavement, undoubtedly belonging to phase beta. In room 33-16, under which the top of the ruined two-meter city-wall rose to 487.42, less than five cm. under the average floor-level, it is obvious that the pavement level must have remained practically the same during the entire history of the West Tower; in the court the highest preserved points on the city-wall and the glacis are, respectively, 487.05 and 487.06, between 45 and 50 cm. below the original level of the alpha pavement, so even here the level of the pavement cannot have risen appreciably in successive phases. It is only natural, therefore, that in the first day of clearance under the alpha pavement (July 28, 1932) we should find almost exclusively potsherds (three baskets in all) from A₁ and B, with some still earlier sherds from C and D-E. The following day we found the same situation, down to bed-rock. Between the glacis and the city-wall, in the original fill (see Pl. 37, a-b; 38, a; 40, a, for the remains of city-wall and glacis), we discovered only sherds from B and A₁, showing that these constructions can only go back to the end of the tenth century at the earliest, and cannot well come down below the ninth. We may safely attribute the two-meter wall and accompanying glacis (revetment) to the early ninth century (probably to the reign of Asa), as pointed out above, § 6. All four (or five?) phases of the West Tower thus date between the ninth and the sixth centuries.

In most areas it is easy to distinguish between the masonry of alpha and that of the next phase below, beta, only foundation walls of which have been preserved. The north and south walls of the alpha court, NW 33-14, are set on an average about 15-20 cm. off the beta line below them (cf. Pl. 6, 9 [section M — M'] and the photos, Pl. 37, a-b; 38, a [where the alpha wall is nearly 30 cm. off the beta line just outside the two-meter city-wall]). Since both the alpha and beta walls averaged about 90 cm. in thickness, this overhang is relatively considerable. The effect of this change in line was to enlarge the court, which became about 40 cm. wider than the beta court had been. In the gateway and the north wall of the Tower it is not so easy to distinguish between the masonry of the two phases, since the exterior faces remained the same and there was no reason to change the width of the wall, which remained about a meter in all three parallel walls. Even in these walls, however, it was generally not hard to distinguish between the masonry of alpha and beta, as may be seen from Pl. 39, a (the northwest inside corner of the West Tower in NW 33-16) and Pl. 39, b (the external face of the north wall). By following courses of masonry around from clear places to less clear loci, we attained reasonable certainty almost everywhere. On the other hand, it would be too much to claim equal sureness for our differentiation between beta and gamma,

while the line between gamma and delta is definitely more fluid. It stands to reason that some parts of the West Tower remained standing at a time when other parts fell in; e. g., there can be no doubt that the walls of the West Gate belong almost entirely to alpha and beta, whereas the less exposed north wall of the Tower may have more gamma or even delta (Pl. 39, b) than we supposed after careful autopsy. On the whole I do not see how our attributions can be appreciably wrong, since there were many lines of converging evidence with reference to stratification. Thus in NW 33-16 (Pl. 39, a) it was very easy to see where the foundations of phase beta had been superimposed on gamma remains (at the surveyor's rod in the photo). Similarly, along section P — P' there are two points where beta walls are unquestionably subsequent to the underlying gamma walls (cf. Pl. 6 and 9, in loci NW 43-3 and 43-4). Furthermore, under the gamma wall between NW 43-3 and 43-4, two courses of which were fully preserved (broken partly away in order to expose the underlying delta wall in Pl. 38, b), was a wall of the same original width. Both the gamma and the delta walls were about a meter thick, but the face of the gamma wall was set back about 60 cm. toward the south, and hence overlapped the lower wall by nearly the same distance on the other face. The single row of stones along the southern face of the gamma wall was laid in phase beta in order to support the substructure of the beta wall above it; exactly the same thing was done by the builders of alpha in building on beta walls (cf. section M — M' between rooms NW 43-1 and NW 33-14). This fact is proved beyond cavil by the simple fact (see section P — P' and the photo, Pl. 38, b) that the northern face of the delta wall shows two courses of stones whereas the southern face of the wall at the same level exhibits only one. Any possible doubt about the attribution of the upper phase to gamma is removed by the fact that it is bonded to the gamma phase of the north-south wall in the background of Pl. 38, b, whereas the beta phase of the latter is built *across it*. Note also that the gamma phase of the north-south wall is built *over* the delta cross-wall. It was here that I tried to distinguish a still earlier phase epsilon, on the following ground: the lower course of the delta phase between loci NW 43-3 and 4 projects somewhat irregularly under the upper course (Pl. 38, b) and seems to tie up with the lowest phase of the west wall of the West Tower, which runs along both loci, 43-3 and 43-4, but is only one course high. The eastward projection is over 30 cm. in some places. However, it is better not to reckon with an epsilon phase, but to assume some vicissitude in the history of construction in this region which escapes us. The existence of at least four phases of construction in the West Tower is, however, certain. The plan of the West Tower in phases delta and gamma differed somewhat from the later plan, and there would appear to have been at least one wider east-west wall running

parallel with the later north wall of the court in alpha and beta. Moreover, the position of this wall suggests that there was also a corresponding wall further south, and that the original West Tower was a kind of "hillani" in form (see above, § 10).

28. Little direct light on the chronology of these phases can be derived from study of the sherds found in the debris associated with them, since all of the walls preserved below alpha are essentially foundation walls, sunk down into older strata. Happily, however, a round storage pit, lined with small stones and full of pottery, was discovered in phase gamma of locus NW 33-15. At some time in the history of this phase it was sunk through the floor into the ruined revetment of the two-meter city-wall from Stratum A₁. After the destruction of the gamma Tower the builders of beta cleared away the upper part of it in preparing for their own construction; cf. section M — M' (Pl. 9). Its attribution to gamma appeared certain to us at the time of excavation, since it had been destroyed to a level corresponding to beta foundations near by. It can never have been over 1.70 m. deep and was probably somewhat less in phase gamma, though the level of the floor in this locus was always approximately fixed by the level to which the ruined city-wall and revetment rose (see above). A large cache of pottery was found in it, nearly all vases being intact or wholly restorable; the cache contained 38 pieces, including 17 small bowls, nearly all ring-burnished, 8 lamps, 5 elongated juglets, 7 other juglets of several types, and a pitcher. Every piece was characteristically A₂; a few might go back to the early seventh or even late eighth century, but the majority were substantially identical with the ware found in the houses of the period just before the final destruction of the city.¹

¹ In the pit was also found a large sherd (illustrated Pl. 28: 5-6) about 11 cm. long, from the wall of a small ointment jug with a spherical body, about 10 cm. in diameter at the widest point. The surface of the sherd is a varnished reddish buff, with ornament in black (badly faded in places); the paste is uniform and well levigated. The basic decorative motif employed on the vase was a series of concentric rings flanked by two bulls with heads lowered as if to gore the ring. The same motif appears in a vase from Cyprus published by Murray, *Excavations in Cyprus*, p. 75, Fig. 136; our example is better executed. Reflecting the undeveloped state of Cypriote archaeology at that time, Murray's chronology oscillated between a date in the sixth-fifth century and a sub-Mycenaean date! Our knowledge of the chronology of Phoenician pottery is still extremely slight, so we can date the vessel only by occurrences of the motif elsewhere. It was borrowed from the Phoenicians by the Assyrians, and variations on it appear in the buildings of Sargon at Khorsabad (Frankfort, *Oriental Institute Communications*, No. 20, frontispiece; Van Buren, *ZA* 45, Pl. XV), dated between 721 and 705, as well as in roughly contemporary Assyrian painted pottery (Andrae, *Farbige Keramik*, Pl. 15-16, 24, etc., where bulls and other animals flank rosettes). The position of the bull on our sherd is virtually identical with that of two bulls flanking a sacred tree on a Phoenician

A date in the seventh century is thus certain, and my former statement that "a date at the end of the eighth century is possible" (*Bulletin*, No. 47, 13) is too generous. This means that gamma was occupied somewhere in the seventh century and that delta was presumably destroyed during Sennacherib's campaign against Lachish, Libnah and other towns of the Shephelah in 701 B. C. (see below, § 40). The date of the foundation of delta lies somewhere between 701 and the early ninth century. The evidence of the pottery accumulated above and outside the ruined ninth-century fortifications and below the floors of beta and alpha opposes a date after cir. 800 B. C., so we may place the construction of delta in or about the second half of the ninth century, under Joash or possibly Amaziah. For the chronology of beta and alpha see below, § 40.

29. In phases beta and alpha the West Gate was structurally part of the West Tower, and the same situation probably held also in gamma; there is no evidence for the situation in delta, though there must have been some kind of gateway in immediate juxtaposition to the West Tower. In the latest phase of the West Gate (Pl. 8) there were two guard-rooms (NW 43-7 and 6) instead of only one, as in beta (NW 43-7). The slightly skew partition wall between 43-5 and 6 (directly west of the main entrance, Pl. 36, a) has its foundation at 487.75, whereas the lowest course of phase alpha on the opposite north wall of the gateway is laid at 487.84, which happens to be exactly the level of the threshold of the main entrance into the city. It follows that this skew partition cannot have been built before alpha. On the other hand, the walls of the guard-room of beta, NW 43-7, are founded 70 cm. lower on bed-rock. Examination of the earth under the skew partition yielded only sherds of E-D to early A₂, not later than about the eighth century, as would be expected from the fact that the floor of beta and gamma cannot have been appreciably lower than the floor of alpha in the gateway. The floor of delta was, however, apparently quite a bit lower, though we could not determine its exact level, since it consisted only of trampled earth.

The outside entrance to the gateway was evidently at the corner of NW 43-8 which is now completely destroyed; its north jamb presumably lay on a line drawn through the north jamb of the inner entrance and the northern face of the guard-room wall. In this way there was no chance for hostile missiles from outside to penetrate beyond the guard-room, or from inside to penetrate

monument in Istanbul which has been published by Ronzevalle (*Mélanges de la Faculté Orientale*, V, 2, 63 ff.) and Dussaud (*Revue de l'Histoire des Religions*, 68 [1913], 62 ff. and Fig. 1), from between 550 and 450 B. C. (judging from the script on the closely related "Astarte throne," *Mélanges*, III, pp. 755 ff. and Pl. IX) and certainly carrying on an old tradition. I should prefer to date our sherd in the seventh century B. C.

through the main entrance into the town. A somewhat similar type of indirect ingress is illustrated by the latest phase of the East Gate (below, § 31). The extraordinary narrowness of the passage between guard-room and north wall of the gateway—one meter wide—means that only pedestrians and laden asses could penetrate through it; chariots and loaded camels had to go around to the East Gate. Since, moreover, there was no space inside the West Gate to accommodate chariots, camels or other large animals, it is clear that the animals were expected to remain outside, only natives of the town and occasional privileged guests being admitted into the town through it.

30. As will be seen from a glance at Pl. 8, the West Tower in phase alpha consisted essentially of a rectangular court, averaging 9.25 by 4.75 m. in extent, from which six rooms opened through six doors at the corners of the court. The basic plan is thus of the "hillani" type (originally perhaps clearer than it later became, as pointed out above, § 27), as will be seen at once if the 60 cm. partition walls between rooms are eliminated. However, it is perfectly clear that the builders of phases beta and alpha had no such plan any longer in mind. The floor of the court and of several rooms was paved with *hawârah* (gypsiferous clay). One jamb in each doorway is vertically grooved at the outside corner, each groove being rectangular and measuring 10-12 cm. in depth, 10-15 cm. in length (cf. Pl. 46, d). Each door accordingly opened outward into the court. Since all these doorways were about 1.40 m. (over 4½ feet) in width it follows that the doors must have had two leaves set in a wooden frame; otherwise the single leaf would have sagged and warped badly. The groove must have been intended to hold one side of the door-frame in position; no other such grooves were discovered in our excavation of T. B. M. No stone door-sockets at all have been discovered anywhere in Stratum A, though one was found in position in Stratum B (SE 22B-1, belonging probably to B₂). Since door-hinges were not yet known at that time (cf. Clarke and Engelbach, *Ancient Egyptian Masonry*, p. 163), the two leaves must have swung in wooden sockets attached to the door-frame. When necessary they were locked in place by wooden bars; it is not necessary to suppose that bronze bars would be used except in the city-gates of a small provincial town like T. B. M.

In the middle of each side of the court were two wall-cupboards, each about 1.25 m. wide and 40 and 50 cm. deep, respectively. They were originally plastered and apparently extended to within a few cm. at most from the floor. We may suppose that a wooden frame with shelves was set into each cupboard. The rooms were entirely empty except for NW 33-15, which was almost one-third occupied by an installation of stone, covered with plaster. This installation consisted of a low vat or tub, 1.70 by 1.10 m. on the inside at the rim, between which and the partition wall was a kind of bench, 1.30 by 1.00 m.

It is hard to see what this installation can have been used for, if not as a bath, since it was scarcely strong enough to have served for any other purpose, the outer side of plastered stones being only about 20 cm. thick at the rim. In phase gamma (seventh century) there had been an underground storage pit directly under part of this basin, in which were found a variety of bowls, jugs and lamps (see above, § 27). Only one reasonable conclusion can be drawn from these facts, that the West Tower served in part as a guest-house for visitors from out of town, particularly for travelling merchants, since friends and relatives would be welcomed in private houses, while government officials would apparently go to the building in the center of the town (below, § 32). The function of the guest-house (Arabic *muḍif* or *maḍāfah*) in the Near East has always been important, and Israelite towns of the late Monarchy without guest-houses would be unthinkable. Hence the well-built doorways and plastered floors, the cupboards and bath, the bowls for food, juglets for oil, and lamps for lighting. That the West Tower was a public building where visiting traders bought and sold is, moreover, proved by our discovery of three standard weights in it: a perfect eight-mina piece (S. N. 147), a damaged half mina (S. N. 142), and a perfectly formed but unfinished twenty-mina piece (S. N. 159), on all of which see below, § 44.

31. The history of the East Gate in the tenth and ninth centuries has been discussed above, § 8. At an unknown time, probably not before the seventh century, the old plan with two pairs of piers was replaced by a new type of gateway with indirect ingress (Pl. 5, extreme left), illustrated in several published photos (below, Pl. 34, a-b; Pl. 35, a-c; TBM II, Pl. 8, a-b). It would seem that there were at least two successive reconstructions after the gateway of A₁. In the first phase the guard-room opposite SE 42-6 was blocked up by two walls, one of which covered the inner two-meter pier on the right, going in, while the other, at right angles to it, replaced the older outer pier on the right. At the same time the tower at the southeastern corner of the gateway may have been built, covering the ruins of an older flanking tower (conjecturally restored in Fig. 1). In the second phase the space between these two constructions was hastily filled with rubble and hammer-dressed stones, yielding a strangely heterogeneous mixture of building elements (see Pl. 35, b, for the southwest face of this filling, and Pl. 34, b, for its northeast face). Removal of this filling at some future time may yield enough sherds to make dating possible. In the filling are two transverse water-channels, doubtless to carry water to the plastered basin shown in the plan, Pl. 5, and the photo, Pl. 34, b. That this basin dates from the latter part of Stratum A is certain, since the debris above it was filled with sherds of the latest type. The basin was 2.30 m. wide and at least twice as long; it was presumably intended to supply water

for the defenders of the East Gate, though its location is curious. One of the channels (on the northwest) consists of a line of grooved stones (Pl. 35, b, indicated on the plan by two pairs of parallel lines), whereas the other is built in the usual way, though with larger stones. The relation between the two channels is enigmatic; possibly the channel of grooved stones was employed for catching drinking water for the plastered basin, while the larger channel was for drainage (in the plan, Pl. 5, I have adopted the opposite theory), but this is rather speculative. It would follow that the ground of the gateway at this point was at least at level 494.65, since the bottom of the larger channel is at level 494.12, the top of the stone lining is 494.47, and the top of the covering stones must have been another 20 cm. or more. The outermost pier (at SE 42A-7), which now reaches 434.30, would then have been destroyed down to the ground level on the outer side (since there was undoubtedly an ascending ramp through the gateway), and the present top of the pier north of it would project about 40 cm. or so above the ground level. The covered drain excavated further inside the gateway (at SE 42A-4) is at all events considerably older and perhaps goes back to the reconstruction of the East Gate in the early ninth century. Since the East Gate was still some two meters wide at the narrowest point in the latest period, it was amply wide enough for chariots and loaded camels, in sharp contrast to the narrow West Gate. Just inside the gateway, moreover, there was an open space, not yet excavated (except for two adjacent test pits, one 4 sq. m., the other 16 sq. m. in extent, which did not exhibit any A walls), where chariots could at least turn around without difficulty. At least two streets and probably more converged into the open space inside the East Gate.

The plan of the latest phase of the East Gate, reminiscent of later ages in the Near East, remains without contemporary parallel, so far as I know.² Yet the type must have been common in the seventh century B. C., and examples are bound to turn up when more towns of the Assyrian period have been excavated. Since a somewhat similar type of indirect ingress was employed at the West Gate as early perhaps as the beginning of the seventh century (phase gamma), we may expect to find prototypes from the eighth century at the latest.

32. Besides the two gates and the West Tower one other building of public character was discovered: in SE 20 and 21 (Pl. 4). Only the heavy walls, 1.40 m. wide, belong to this structure; the smaller walls all represent older constructions belonging to private houses of an earlier phase. Only one or two

² The contemporary gateway of Lachish (*The Lachish Letters*, p. 223), though very different in detail, also exhibits indirect ingress, breaking violently with the old tradition.

courses of the large building survive, so it is quite impossible to date it directly from the adjacent objects, all of which belong to its foundation level. On the other hand, though no complete pottery was found in the older loci SE 21A-6 and 7, or SE 20A-1 and 2, pottery was found on the earlier floor-level at 495.61 (SE 21A-5), immediately adjacent on the east. One piece in particular (S. N. 606, TBM I, Pl. 65: 23) can hardly be dated later than the middle of the eighth century; it suggests a date in the late eighth or early seventh century for the construction of the large building in question. The plan of the latter is impossible to determine from the excavated fragment, which consists only of two parallel lines of wall and a cross wall, all 1.40 m. thick; the distance between the parallel walls is 3.30-3.50 m., which is too great for a structure of casemate type. I have thought of a "hillani," but the fact that the two parallel walls have the same thickness seems fatal to this view, not to mention the fact that the T. B. M. building is at least a century later than the latest attested building of the type in question (for which cf. above, § 10, and below, § 35). We may safely suppose that this building was comparable to the fortresses which crowned the highest points of the neighboring towns of Lachish and Azekah during part, at least, of the Monarchy of Judah. For completion of the outlines of its plan and for more precise dating we must await future excavations at T. B. M.; it was probably destroyed in 598 B. C. (below, § 40).

33. Nowhere in Palestine have so many well-preserved Israelite private houses been excavated as at T. B. M. For this reason I have decided to include a maximum selection of levels in the plans of Stratum A, in order to facilitate the task of the analyst, and to enable him to distinguish between walls belonging to different phases of the stratum. At first I meant to describe the various types in detail, but when I attempted to classify them I found that more comparative data from other sites are necessary before this task can be undertaken with safety. Types of houses range from the simple structure illustrated in Pl. 7, NW 11A-4 and 5, which consists of a large room with four stone pillars and a smaller room in back, to such relatively complex structures as the two houses illustrated in Fig. 3 (1: Pl. 3, SE 32 and 33; 2: Pl. 6, NW 21 and 22).³ Owing to the fact that nearly everyone who tried to build a new house was handicapped by having to conform to the surrounding house-walls, which often projected most awkwardly into his little domain, house-plans can scarcely be expected to show much symmetry. It is really surprising how regular they are in spite of all the obstacles in the way of regularity, and how much alike

³ Note that through a slip the walls in the southeastern corner of NW 22 have been omitted from the plan, Pl. 6. Part of them will be found in the overlapping plan, Pl. 7, and the rest have been included in the figure in the text.

nearly all houses are, despite the lack of systematic city planning. It is also quite possible that some of the apparently simple house-plans, like NW 31A-10 and 11, really represent shops, not living quarters. Characteristic of the overwhelming majority of houses in T. B. M. Stratum A, are the rows of three or four stone pillars (rarely two or five) which are set along the axis (sometimes transversely) of the large room which forms the nucleus of each house.

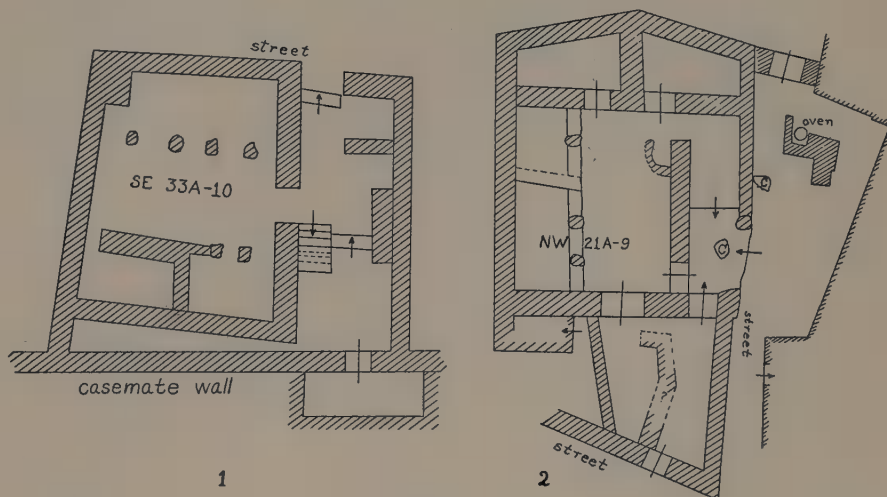


FIG. 3.

In the next section we shall consider the origin and antiquity of this plan. For their appearance see the photos in Pl. 42-47, 49, where all types and functions of these pillars in T. B. M. A₂ are illustrated. Structurally they play two major roles: first, to serve as vertical stones set into a partition wall at intervals to strengthen it (Pl. 45, b, between NW 31-7 and 8, behind NW 31-10; Pl. 47, c, SE 22A); second, to support the ceiling without cutting off the entrance of sunlight from outside. One reason for their great abundance at T. B. M. is probably that they were also used to support vertical looms (see below, § 36), where the strain on an ordinary rubble wall would endanger the stability of the house. They are nearly always off center, that is, they are not on the axis of the room but stand between half a meter and a full meter to one side of it, dividing the room into two parts, one of which is one-half to two-thirds the size of the other. Since the smaller part is very often partitioned, while the larger part is virtually never, it seems highly probable that the larger part of the room was partly open to the sky, though the side nearest the stone

pillars may have been covered by projecting rafters. Otherwise the lower story would be so dark that it would be almost impossible to work in it. The pillars often varied greatly in character and size. Most of them were composed of single stones, roughly square or rectangular in section, varying from one to two meters in height in their present state. Since the tops of practically all of them show signs of considerable wear and tear, and since scores of unexcavated pillars still project above ground all over the mound, we may be certain that many of them were originally much higher than they were when we found them and that the tops of these pillars were all originally flat. Shorter stones were capped to raise their height (e. g., Pl. 43, b), and not infrequently we find flat stones set on top of one another to make a pillar (e. g., Pl. 44, a, where both the end pillars consist in their present truncated form of three superimposed stones). It is hardly necessary to list all minor variations on this theme.

The height of the ceiling of the lower story can nearly always be calculated from the dimensions of the stone staircases leading to them, with due consideration of the height and depth of each step. Many such staircases were found; among well-preserved examples may be mentioned those in the following loci: SE 13A-16A (six steps preserved); SE 24A-6; SE 33A-5; SE 32A-8 (Pl. 46, c, leading from lower to upper street-level); SE 50: 1 (Pl. 51, b, leading from lower to higher level); NW 32A-11. Frequently staircases do not appear clearly as such, owing to some peculiarity of construction or to the fact that no steps remain; e. g., it is hard not to explain the block of thick walling at the northwest corner of SE 33A-10 (cf. Fig. 3, 1) or the locus NW 21A-8 (cf. Fig. 3, 2) as properly staircases. Apparent absence of stairways must mean that wooden steps or ladders were used. Calculating from the dimensions of well-preserved staircases, the height of the upper story from the ground may be estimated as about two meters. Allowing about 20 cm. for the thickness of the ceiling or roof (of rafters, covered with smaller pieces of wood, overlaid with a thick coat of *ḥawârah*, gypsiferous marl) this would leave a good 1.80 m. (almost exactly six feet), a height seldom attained by men in the ancient Near East. Probably every house was provided with an upper story, generally consisting of only one or two small rooms (Heb. *‘aliyyah*), in which the master of the house and his family slept. The rest of the roof space was left free for use in a multitude of ways. In order to prevent the roof from leaking it was rolled regularly with cylindrical roof-rollers, a good many of which were found in our excavation. Since they were all much alike in general appearance, we may limit ourselves to giving the dimensions of four such rollers found at the beginning of the 1928 campaign. (1) 68 cm. long,

90 cm. in maximum circumference, ends perforated to depth of 10 cm. for insertion of handles (SE 33A-12); (2) 60 cm. long, 65 cm. in maximum circumference (SE 22A-4); (3) 60 cm. long, maximum circumference 78 cm. (SE 32A-1); (4) length over 40 cm., maximum circumference 78 cm. (SE 33A-11). It would appear that many households had their own roof-roller. The superstructure of many houses was built of sun-dried bricks (adobe), many of which were found in the course of our work.⁴

One must assume a considerable change in housing habits between Iron I and Iron II. In Stratum B, just as in contemporary levels at Bethel, Bethshemesh and elsewhere, space within the limits of a town was not so crowded and people lived principally on the ground-floor. Some kind of paving became necessary under such conditions, and appears, e. g., in the B house described above, § 9. In Stratum A, on the other hand, where people slept and relaxed almost exclusively in the upper story, there is very little attempt at paving the floors of the first story, which consisted simply of trampled earth. This, of course, applies to ordinary dwelling houses, not to more elaborate structures like the West Tower, which was paved. Another striking change is in the substitution of wooden door-frames for the Bronze-Age type, which persisted down into Stratum B (above, § 30). In the first story of ordinary houses, there was indeed a tendency not to employ doors at all, to judge from the relative infrequency of stone thresholds in doorways of Stratum A. For example, in the large house illustrated in Fig. 3, 1, there is only a single threshold, opening into a casemate store-room, which was presumably kept locked for safety. On the other hand, in the house shown Fig. 3, 2, there are no fewer than five stone thresholds in the ground-floor. In some cases, we may suppose that curtains of matting were employed to ensure privacy. Where a ladder could be pulled up on the roof, it was not particularly necessary to bother about locked doors.

In nearly all houses were found the usual bins, mortars, basins of hollowed-out stones, etc. Underground storage pits become exceedingly rare in A₂; practically all those indicated in our plans (e. g., Nos. 31, 32, 26, 36 in SE 13A) belong to A₁, but they are almost invariably smaller than the silos of Stratum B. It is a question whether the pit, lined with clay, from about the eighth century in SE 23A-13 (Pl. 48, b) was intended for storage or was

⁴ The following dimensions of complete bricks from Stratum A may be listed here: a brick from the East Gate, 39 cm. square and 19 cm. thick; bricks from NW 13, 45 x 30 x 15 cm.; a brick from SE 32-2 (dye-plant), 52 x 28 x 18.5 cm. It is obvious that metrologists can do little with variations like this, since even apparently perfect exponents of a system would be suspect.

not a small cesspit; the latter alternative seems more probable. Ovens were found in great profusion; they are indicated in the plans by a small round circle (e. g., Fig. 3, 3, upper right). Cisterns were also fairly abundant; e. g., there are two cistern-mouths in the single house in Fig. 3, 2. For a short account of our excavated cisterns see below, § 39.

34. When were the stone pillars introduced into house construction at T. B. M., and to what type of building did they originally belong? These are not altogether easy questions, since comparative data are surprisingly rare and ambiguous. It is clear that the use of these pillars began to become less frequent before the end of Stratum A, and that they were most popular about the eighth century. Nowhere can they be traced back with confidence into Stratum B and there is no clear-cut evidence that they were employed before the late ninth century (A_1). The following illustrations will elucidate the stratigraphic situation where it could be determined with some precision. In 1926 we devoted great care to excavating and recording the stratigraphy of the area around NW 13, where we at first believed that the large standing stones belonged to a cultic installation of some kind (*Bulletin*, No. 23, 5 f.), though this idea was given up before the end of the first campaign. In room NW 13-9 we found two floor-levels, one at 490.30, the lower one at about 490.00. 70 cm. below the upper floor and 40 cm. below the lower floor were the bottoms of the two northernmost standing pillars, at 489.60.⁵ The two latter measured 1.85 by cir. 0.55 x 0.50 m. (the second had been broken and the upper part set on again afterwards), and must have weighed originally more than 1400 kg., or at least 3100 pounds (reckoning the specific gravity of their limestone at about 2.7). These pillars undoubtedly preceded the other two, toward the south, since the lower ends of the latter are some 30 cm. higher, and the pillars themselves are quite different, the southernmost being only 1.60 m. in height and smaller in section, whereas the remaining pillar is formed by superimposed stones, three of which are still *in situ*. There can be no reasonable doubt accordingly, that the two largest and oldest pillars in this locus go back to about the third phase from the end of Stratum A in this area, i. e., probably to the ninth century B. C. In several adjacent rooms we confirmed this observation. E. g., in NW 13-2 the third pillar toward the north, which is 1.80 m. high, was based 70 cm. below the latest floor, and the fourth pillar (1.60 high) was based 40 cm. below the latest floor. In NW 13-1 the northern pillar, also 1.80 high, is based 40 cm. below the pavement of the latest phase, the other three all being set on bases which were themselves laid at the latest pavement level. Similar observations could be multiplied all over the site. An illustrative fact is the

⁵ A mistake was made in labeling the photo, Pl. 51, a; it should be NW 13-9.

increasing use of broken pillars as stones in house-walls, laid horizontally (e. g., between NW 3-1 and 2).

35. Hitherto very few contemporary Israelite houses of similar character have been discovered, and no precisely similar houses have been published from any site in Palestine. The "high place" discovered by Bliss and Macalister at Tell eš-Şâfî is perhaps the most striking parallel, and for some time I tried to explain it (cf. ARI 193, n. 94) as a larger private house, made by removing a party wall between two older houses; the stone pillars, three of which were found *in situ* (there were more originally), are comparable in size (1.77—2.15 m. high and cir. 0.48-0.77 across), while their irregular shapes can be explained by weathering (so Bliss and Macalister), since they were made of much softer limestone. However, the excavators' explicit statements (BM 35), confirmed by Père Vincent (*Canaan*, 103-108), make a Late-Bronze date probable, so this supposed parallel must apparently be abandoned. In any case there are differences in shape and size of the pillars, in plan of the building and in thickness of the walls, etc., which would cause trouble. This leaves us with only slender parallels from Megiddo, Beth-shemesh and Tell en-Naşbeh, in part not yet published. It is most remarkable that not a single parallel house has been discovered in Beth-shemesh IIc, which covers the eighth and seventh centuries! Can it be that the later development at T. B. M. is even more closely connected with the use of vertical looms for woollen cloth than already suggested? In any case the two structural functions which we have stressed above, can scarcely be separated; any explanation of their origin must reckon with the presence of both functions. Happily there are good parallels in principle from several Palestinian sites of the early first millennium. At Megiddo a building (1A) of quasi-hillani type, probably from IVB (second half of the tenth century; see above, Chap. I, n. 10), is characterized particularly by two rows of four standing stones (for photo see *Megiddo*, I, Fig. 9) which stood opposite one another along both sides of a narrow central court, cir. 5.50 by 2.50 m. in extent; behind the rows of columns were two narrow rooms about 1.60 m. wide. Details of the masonry in this little building diverge widely in the available plans (contrast MRMC, Pl. I with *Megiddo*, I, Fig. 6), but Lamon and Shipton state (p. 3) that the "crudely-cut upright stones of 1A do not appear to have had a purely structural use." Exactly this is the situation in most cases at T. B. M., as we have already observed. If a solid wall were substituted for one of the two rows of standing stones in 1A at Megiddo, the plan of 1A + 72, with the row of pillars running lengthwise of the room, a little to one side of the axis, would be virtually identical with many similar rooms at T. B. M.; e. g., NW 32:10; NW 11A-1, 2, 4; SE 42A-

1; SE 51A-5, etc. Several of these rooms have almost identical dimensions. Thanks to the courtesy of C. C. McCown, I have become acquainted with the plan of a larger building of the same basic type at Tell en-Naşbeh, just south of the main gate of the early ninth century. This building employs essentially the same plan as Megiddo 1A, i. e., its principal feature consists of three parallel loci, all long and narrow, the wider middle locus being separated from the other two by rows of standing stones set in a kind of rubble stylobate. On one side all six stones are preserved; on the other side only three were found *in situ*. The middle locus, between the rows of standing stones, measures about 8.50 by 3.00 m. on the inside; together with either of the flanking loci it measures about 8.50 by 6.00 on the inside, which is larger than the largest of these rooms at T.B. M. (e. g., NW 31A-10 is about 7.75 by 6.00 m.). It would appear that this very practical type of construction, which ensured both adequate light for the lower story and sufficient support for the upper story, was rather common in Palestine between 950 and 850 B. C., and that it was early modified, at least in the south, into the type of private house which was dominant at T. B. M. in the eighth and seventh centuries. For a brief discussion of the background of the use of standing stones in wall construction see Wright in ASE V, 68, on examples from Strata IIa-b (tenth and ninth centuries) at Beth-shemesh, and on precursors at Tell Abu Hawam (Strata IV-III, cir. 1175-1000, Chap. I, n. 2).⁶ There is also some pertinent material from Bethel and Beth-zur, none of it published and not bearing directly on our own immediate problem.

It seems probable that the type of house illustrated by the two buildings at Megiddo and Tell en-Naşbeh from the late tenth and the early ninth century goes back to Phoenician sources, both because of many architectural and decorative analogies from the same period and because of partial parallels from southern Phoenicia (Tell Abu Hawam) in the preceding two centuries. It may then be that the type arose in Phoenicia under the combined influence of New-Egyptian house-plans with pillars (e. g., the Amarna villas of the fourteenth century, Rieke, *Der Grundriss des Amarna-Wohnhauses*, p. 41, Fig. 40, etc.) and under the influence of Syro-Mesopotamian structures of the "hillani" type, on which see now especially Weidhaas, *Zeitschrift für Assyriologie*, N. F., 11 (1939), 108-168.

36. Of unusual interest were six or seven dye-plants excavated in Stratum A—two or three in the northwest quadrant, three in the southeast, south of the

⁶ Note also a tenth-century house from Gezer (G I, 162 and Fig. 60), Stratum V (Macalister's Fourth Semitic, on the chronology of which cf. above, § 16), with three such stone pillars, carefully squared and about 1.05 m. high.

East Gate, and one north of the East Gate. Since we cleared about one-fifth of the area inside the walls of A, and since the dye-plants which we found were quite evenly distributed through the town, we may safely infer that the total number was not far from thirty, say between twenty and forty. This is a very considerable number for a comparatively small town, so our deduction that the inhabitants of the town must have specialized in the manufacture of textile goods was fully justified (see especially APB 119 ff.). This deduction was demonstrated beyond cavil by the finding of scores of basketfuls of loom-weights, all shaped like doughnuts (see TBM II, Pl. 45: 9-16 for specimens from Stratum A). For instance, in the first two days of our excavation in NW 13 in 1926 (loci NW 13A-1-3) we found two basketfuls of these objects. A quantity of them was also found, e. g., in SE 51A-2, where we inferred that a vertical loom had stood, firmly secured to the four stout standing stones of that locus, the bases of which were kept in place by double rows of packing with stones averaging about 20 cm. in length. In SE 23A-5, with four standing stones, we counted 97 loom-weights, but this is only a minimum, and the original number (including pieces anciently discarded) must have been considerably over a hundred.

The most important dye-plants were two built side by side, with two round stone vats in each (SE 32A-2-3), shown in plan Pl. 11, b, and in photographs on Pl. 53, a-b. One of the vats is shown on its side in Pl. 52, a. The vats themselves were surprisingly uniform in size and form. All varied between 70 and 90 cm. in height and diameter, and all contained a relatively small and roughly spherical basin, between 30 and 45 cm. in diameter, with a mouth one-half to two-thirds as wide. Around the rims of all four vats was chiseled a circular groove, obviously to catch the dye, which ran back into the vat through a connecting hole. When the dye was being stirred up a small stone was inserted into the hole from the outside, in order to keep the liquid from splashing out. Several of these stones were found still in place as we excavated in different dye-plants. In room 2 there were two solidly constructed rectangular basins of stone and plaster just in front of the basins, together with a bench (see below) between the latter; the basins were about 65 cm. deep and averaged about 1.30 m. in length and 0.90 in width. In room 3 there was a narrow bench in front of the two vats and a rectangular basin of stone and mortar (partly plastered) between them; the basin measured about 1.80 by 0.80 m. and was about 55 cm. deep. Between the vats in room 2 was a large handleless jar S. N. 247, set in the bench already mentioned. This jar was of nearly the same shape as the two jars published TBM I, Pl. 52: 12-13, but was somewhat larger (51 by 35 cm.); since the first of the two jars in question was employed as a

dye vat set in a stone bench in NW 42A-2, the point is important. In room 2 there were three wall-cupboards and in room 3 there were two more. In the two corners of room 2 nearest the vats were found standing upright the two hole-mouth jars S. N. 248 and 249, while in the same positions in room 3 stood the hole-mouth jars S. N. 250 and 251. At least two of the hole-mouth jars were partly full of slaked lime. One of them was covered with a flat stone when found. Since we found two exactly similar jars in precisely the same positions in the dye-plant SE 23A-10, we are again confronted with a standard pattern. In room 3 were found at least six large perforated stones, like the stones found in other dye-plants on the site. There may have been more, but we could not remove them without endangering the stability of the badly sagging north wall (this locus was not excavated below Stratum A). At the other end of room 3, away from the vats, was a long, masonry bench, originally about 2.20 m. long and 0.55 wide, on which was some pottery, including S. N. 289, a large two-handled pitcher. When the two rooms were excavated they were found to be full of a solid mass of calcined stone, lime, plaster and brick, which was nearly as hard as concrete, indicating a terrific conflagration at the time of the final destruction of the town cir. 589 B. C.

The first dye-plant of this type was discovered in 1926 in NW 3A-4 (Pl. 7; 51, c; 52, b; Kyle, *Excavating Kirjath-sepher's Ten Cities*, Pl. VII). This dye-plant resembled SE 32A-3 rather closely in its disposition, with two round stone vats, between which was a masonry basin and in front of which a masonry bench. One of the round vats was more elaborate than the vats in SE 31, having two concentric grooves instead of one; the other was much simpler, lacking any circular groove at all. At the far end of the room was a rectangular stone trough, upside down (it may have been left standing on its side when the place was abandoned), measuring about 1.00 by 0.65 m. outside and 0.70 by 0.40 inside. There were also some eight perforated stones, 30-40 cm. across and about 20 cm. on the average in thickness. Standing between the two vats was a large two-handled jar, S. N. 63 (TBM I, Pl. 52: 14); and one hole-mouth jar (S. N. 37) was also found in the room, though I do not recall just where.

Of chronological importance was the discovery of the dye-plant SE 23A-10, which had been abandoned a considerable time before the end of the occupation of the site. In the last phase of occupation in this area, SE 23A-10 and SE 33A-15 formed an open space around a large cistern, directly off the southernmost east-west street; the top of the cistern had been rebuilt in part over the ruined east wall of the dye-plant. The pavement of the cistern area was in the latest phase about 1.60 m. above the floor of the dye-plant which it covered.

The two round stone vats were both provided with circular grooves, of the same type as in SE 32A-2-3; between them was a badly damaged masonry basin as in the last previously described dye-plant, and in front had been a masonry bench. In the adjacent corners were the hole-mouth jars -S. N. 634-5, one containing a quantity of lime. In this room was found a considerable amount of pottery, most of which had evidently fallen from the upper story into the dye-plant and was only to be restored in part. I have no hesitation in attributing all this pottery to about the end of the eighth century B. C.: note particularly the water decanter S. N. 469 (TBM I, Pl. 59:4) with its archaic conoidally shaped body, and the lamp S. N. 478 (TBM I, Pl. 70:8) with an exceptionally thick base, apparently a peculiarity of the eighth century B. C. (at Megiddo this kind of lamp was characteristic of Stratum III, from the period 800-735 B. C., *Megiddo*, I, Pl. 37:6-7; and note that we found very few whole lamps of this kind at T. B. M., but quite a number of thick bases suggesting that the latter belonged to a type discarded some time before the end of the town). Even more striking were fragments of a large amphora, with a smooth reddish brown surface of archaic appearance, on one sherd of which were preserved the incised letters *bt* (TBM I, 77, Fig. 12:1; below, Pl. 60:2). E. L. Sukenik correctly explained the letters as forming the word "bath," standard liquid measure; more recently the excavators of Lachish have discovered fragments of a jar of the same general type containing the full incised inscription, *bt l-mlk*, "a royal bath" (PEQ, 1938, 248, 253; 1941, 104 ff. and Pl. IX-X).⁷ Diringier is undoubtedly right in "placing it much earlier" than

⁷ There can be no doubt, in my judgment, that the excavators have made a mistake in trying to identify the standard reflected by jars bearing the inscription *bt l-mlk* and jars bearing the royal stamped handles. The diameter of the mouth of the Lachish example of the former class is 8.15 cm. To judge from the general appearance of our sherds and the identical measurements of the preserved letters, our jar was comparable in size. Moreover, the type of vase can be approximately reconstructed from a whole jar published in TBM I, Pl. 32:4, which seems to have the same rim and shoulder, as well as four handles; it measures 58 x 38 cm., with an outside diameter of 10.5 cm. at the mouth, being thus larger than the inscribed jars. On the other hand, the stamped jar from Lachish measures 68 x 43 cm., with a diameter of about 10.8 cm. at the mouth. Assuming that the proportions of the two types of jar were approximately the same (but note that the body of the type *bt l-mlk* almost certainly bulged more between the handles and the base, thus having greater capacity in proportion to its maximum dimensions) we should have a ratio in volume of 8.15³:10.8³ or about 541 to 1259. Allowing for the bulge just mentioned and admitting the inadequacy of such a method of computation, it is still clear that the stamped jars were about twice as capacious as the inscribed ones. Since the latter are explicitly labeled "royal bath," it follows that the former category must represent two baths if the standard of capacity is the same, which seems likely. In other words, Inge's proposed determination of the bath is just

the "late Jewish period" (Inge) "for strictly epigraphic reasons." First is the tendency to exaggerated prolongation of the shafts of letters (*beth* in our text and probably at Lachish; *lamed* twice at Lachish; *kaph* and probably *mem* at Lachish), characteristic of the eighth century, beginning with the Ostraca of Samaria, from cir. 774-766 (ARI 41), and closing with the Siloam Inscription, about 700 B. C.; the most extreme instances appear in an ostrakon from Samaria dating from about the third quarter of the century (PEFQS, 1933, 152 ff. and Pl. III; 1936, 211 ff.), but there are a number of other examples. Second is the archaic head of the *mem*, which is characteristic of the eighth century. It would appear that the conflagration which broke the jar on which this inscription was incised at Lachish, must again belong to the partial destruction of the town at the time of Sennacherib's invasion, in 701 B. C. Our evidence is thus confirmed by the Lachish parallel, and a date before the partial destruction of T. B. M. at the end of phase delta of the West Tower, cir. 701 B. C. (above, § 28), thus appears probable, and is not contradicted by any of the remaining sherds or vessels found in this locus, mostly lamps, saucers and pottery stands. The importance of the pottery is that it enables us to trace the history of the dye industry at T. B. M. back at least to the eighth century B. C.

In 1926 we discovered another dye-plant of a different type in SE 42A-2 (Pl. 5; 51, d). Into a masonry bench about 3.00 m. by 1.10 and 0.50 m. high were built two handleless jars, S. N. 35 (TBM I, Pl. 32:1, 52:12) and 36. As Kelso and Thorley have pointed out (below, § 138) both shape and rims of S. N. 35 are almost ideally suited for their function in a dye-vat. S. N. 35 was 55 cm. tall and 36 in diameter at the widest place. Near the masonry bench was a large thin-walled jar full of "light gray ashes," as the contents were described in my notebook. Unfortunately no sample was preserved, but there can be little doubt that they consisted of decomposed potash (lixivated plant

twice too large and the real equivalent is 22 liters. Barrois's useful study of the evidence (RB, 1931, 198-213), which Inge overlooked, furnishes all the available data, which are indeed scanty. The current estimates, based on Josephus (Barrois, p. 212, doubtfully suggests 39.384 liters for the bath) are entirely wrong, and Germer-Durand's estimate from a group of stone measures now in the Notre Dame museum in Jerusalem (Barrois, p. 210, n. 3), that a bath equals 21.25 liters, is right after all! A decline of the standard from 22 to 21.25 liters in several centuries is perfectly normal. In any case it must be emphasized that the excavators of Lachish have probably solved the problem which has so long vexed metrologists, even if a mistake was made at first. In this connection it may be observed that the stamped jar handles with the royal inscriptions probably begin after the disuse of the earlier type, which must certainly be dated before 701 B. C. A date in the seventh and early sixth century for all types of the former now becomes probable; the royal stamps in question may then have been introduced by Hezekiah (cf. § 43).

ash), an essential element in dyeing, as we shall see. In the room were nine of the usual large perforated stones. In the adjacent room (1) two more such stones were found and at the bottom of the cistern below the rock-cut shaft to the northwest, another was found; these three stones were evidently not used in the latest phase of the dye-plant in question.

In the northwest quadrant an isolated dye-vat of the usual round grooved type was found in NW 32-13 (photo, Pl. 43, a), to which it must have been removed in antiquity, since it was certainly not *in situ*. It is further possible that the curious stone slab found in NW 11A-7, about 1.40 by 0.55 m. on top and about 35 cm. thick, with two small basins about 30 cm. deep (only the mouths are shown in the plan, Pl. 7), cut into it near both ends, is a "home-made" dyeing installation. The grooves on the face of the slab are peculiar.

37. My interpretation of the dye-plants of T. B. M., their role in the textile industry, the industrial methods employed in them, etc., has been presented briefly in APB 119 ff., and has been accepted by Galling (BR 154) and Watzinger (DP I, 100 f.). Since then Dalman has expressed doubt about the correctness of my interpretation, suggesting that they may be olive-presses (ASP V, pp. 77 f.). As we shall see, his skepticism is entirely unjustified. Olive-presses were very different in appearance; see above, Chap. I, n. 8 and TBM II, § 74, for two such installations from Stratum C, and below, § 38, for an olive-press of our period. To amplify Dalman's useful, though not entirely adequate, sketch of dyeing in Syria and Palestine (*ibid.*, pp. 70-89), I subjoin a short account of cotton-dyeing as practiced at Hebron in August, 1930:—

This plant devotes itself to dyeing cloth dark blue for the Bedouin. The dye used is indigo (*nil*) from India and Egypt. The *nil* from India is more expensive, but the process of dyeing is shorter than with the cheaper *nil* from Egypt (contrast Crowfoot-Baldensperger in Dalman, p. 75, on the situation in Jerusalem in 1931, where European synthetic indigo had already replaced vegetable indigo). The nucleus of the installation consisted of ten earthenware vats, about 50 cm. in diameter, five set in each of two long masonry benches (cf. the two in a single masonry bench in SE 42A-2). The first vats receive only a little indigo, the second twice as much, and the others in ascending arithmetical proportion. First *qili* (potash) and *šid* (slaked lime) are put into each vat, where they stand for two days before the indigo is put in. It is interesting to note that the lime is stored in a large jar near the door (cf. the jars with lime in several of the dye-plants at T.B.M.). On the third day the cloth is put into the mixture. Since dye is now cheap in comparison, the dyers pay little attention to waste, unless on a large scale. Ordinary cheap cloth receives only two baths in successive vats (in increasing order of strength); the best receives no fewer than ten baths. Afterwards the cloth is wrung out lightly and spread in the sun to dry. We were expressly informed that the lime was used to fix the dye and not for bleaching (as had been suggested). Lime and *qili* were formerly mixed with the indigo dye in Jerusalem (Dalman, p. 75).

For elaborate information about industrial practices in dyeing in Europe about the middle of the eighteenth century, before the Industrial Revolution, one may advantageously consult Savary, *Dictionnaire Universel de Commerce* (new edition, Copenhagen, 1762), V, cols. 925-960. In France at that time both hot and cold baths were employed (cols. 927 ff., 942), the former being preferred for animal fibres such as wool and mohair, the latter for vegetable fibers such as linen and cotton. For use with indigo in dyeing wool were recommended potash, slaked lime (both as in Palestine), green vitriol (copperas, or protosulphate of iron), madder and bran. It stands to reason that details of the ancient Israelite process must have been very different, though all these substances were well known in the ancient Near East (as may readily be seen by consulting the indices of Campbell Thompson's invaluable *Dictionary of Assyrian Chemistry and Geology*, 1936, though the latter must be used critically). However, it is very noteworthy that we found lime and perhaps potash in our dye-plants. Dalman's chief objection, p. 78, that the mouths of the vats are too small to admit cloth without serious difficulty, loses its effectiveness when we remember that *thread* seems to have been dyed in preference to the whole cloth in the ancient Near East, in order to obtain the mixed colors used ordinarily in weaving garments. In Egypt we have an allusion to the "boiling of thread" (*pšt nwt*) in a scene at Benī Ḥasan, from the Middle Empire (2000-1800 B. C.), published by Newberry (*Beni Hasan*, II, Pl. IV, XIII) and Klebs (*Reliefs und Malereien des mittleren Reiches*, 1922, pp. 123 f.). From this it would appear that the Egyptians preferred the hot-bath process to the cold—but it would be most imprudent to generalize on such slender evidence. The Babylonians also apparently dyed thread in preference to cloth, to judge from a passage in Shurpu discussed briefly by Meissner, *Babylonien und Assyrien*, I (1920), pp. 254 f.—Before leaving the subject it may be well to remember that all the dye-plants were located in the immediate vicinity of cisterns, since a great deal of water was needed in dyeing. This fact alone is enough to make the oil-press idea improbable. The presence of the perforated stones is easily explicable when we recall that dye was very expensive in those days, and that the dyed thread had to be thoroughly pressed, in order to save as much dye as possible. Precisely the same perforated stones were also used in pressing olives, as we shall see in the next section.

Contemporaneous evidence of the dye industry comes from other Palestinian sites, especially Beth-shemesh, Bethel and Tell en-Naşbeh. The material from Beth-shemesh has been published; see ASE V, 75, where Wright lists five round stone vats as having been found by Grant, three in Stratum IIb (ninth century) or early in IIc (eighth century), and two in a single dye-plant (like

those at T. B. M.) which was used down to the end of the town about 589 B. C. It is noteworthy that all the examples illustrated have a raised flange around the rim, with a depressed flat area around the mouth of the basin; this may have been the standard form before the late eighth century. At Bethel one round vat, nearly identical with the T. B. M. type, was found lying on the surface, below the Israelite site. The material from Tell en-Naşbeh will be published soon. For Hellenistic dye-plants see Sellers, BZ 16 ff. (cf. *Bulletin*, No. 43, 11 f.) and Macalister, G I, 223-8, as well as Watzinger, DP I, 101, and Galling, BRL 154.

38. The fine olive-press in NW 32-12 was excavated during the two days July 12-13, 1932, and was so clear in character that it was recognized as such the first day (Pl. 49, a-b). Very good parallels are known from Gezer (G II, 61-65), dating from the tenth century if Macalister is correct in attributing it to his Fourth Semitic, which shows a nearly complete hiatus between the tenth century and the Persian period (see above, § 16), and from Beth-shemesh (ASE I, 25 ff.; ASE V, 75 f.), dating from the seventh century, like our installation at T. B. M. Our locus is 7.00-7.50 m. long and 5:00-6:00 wide. Toward the southwest corner of the locus were two shallow vats of masonry, both badly damaged by the final conflagration, one about 1.40 m. long and 0.80 m. wide, the other about 1.60 long and 0.80 wide. Both vats were about two meters from the west wall of the locus. Opposite them were three high, narrow niches in the west wall of the locus, with their axes located respectively 0.70, 2.30 and 3.90 m. from the southwest corner of the locus. The best preserved niche (the northernmost) is cir. 70 cm. high and 30 wide; the middle one is a little higher and narrower; the third is almost entirely destroyed. In the locus were many large perforated stones, averaging considerably heavier than the otherwise similar stones used in the dye-plants. In the photo only the perforated stones⁸ in the western half of the locus are in place as found; the rest were moved by the workmen, owing to a misunderstanding, and are thus

⁸ There is an interesting difference in shape between the stone weights of T. B. M., used and presumably made in the seventh century, and those from Gezer and in part from Beth-shemesh, which belong to the tenth and ninth centuries. The T. B. M. weights, though irregular in shape, generally look somewhat like huge doughnuts, while the earlier weights are more or less pyramidal in shape, with perforations at the upper end. This difference in shape is almost certainly chronological—i. e., the shift from pyramidal to doughnut form took place not far from 800 B. C. Curiously enough we have a similar shift in the form of clay loom-weights at some time between the Bronze Age and the eighth century B. C.; cf. the contrast between the upper two rows and the lower two rows in TBM II, Pl. 45, a. According to Wright both types appear at Beth-shemesh, but evidence for their comparative date is lacking.

omitted from the plan. Some eighteen were found in all—i. e., enough to weight two heavy beams, if we allow some nine for each beam, according to the average which seems to have been used in the dye-plant (where only one beam would suffice for pressing out the dyed thread (see above). The bottom of the wall niches was about 80 cm. above the bottom of the two vats and about 50-60 cm. above ground-level in the locus. As a rule we may suppose that blocks of wood were inserted in the niches above the fulcrum end of the pressing beam, since the top of the niches is too high for ordinary purposes. No fewer than seven large jars were found in the locus (two are shown in position, Pl. 49, b), S. N. 2149, 2169, 2230, 2231, 2257, 2265, 2524, including three four-handled jars, each 44 x 36 (35) cm. in size, two smaller two-handled jars, and two large handleless jars, 51 (49) x 37 (38) cm. in size.—For details on the process of pressing olives, as well as for comparisons with other ancient and modern olive-presses, see the discussions by Macalister and Fisher, just cited, as well as Dalman, ASP IV, 212 ff.; Galling, BRL 403, etc.

39. There were numerous cisterns at T. B. M., though the average was lower than in most excavated Israelite towns in the hill-country proper, owing to the presence of excellent wells in the adjacent valleys (cf. TBM II, § 5, and Kyle, *Excavating Kirjath-sepher's Ten Cities*, pp. 34 f.). However, little or nothing of significance can be added to what has appeared in Macalister's *Gezer* or will appear in the Tell en-Naşbeh publication. No trace of cisterns antedating Stratum A was discovered, and it is scarcely probable that any of the cisterns which we have hitherto cleared, had ever been in use before Iron II. The most interesting cisterns which we cleared were in SE 33A-15 (May, 1928), in SE 31A-9 (June-July, 1930), in NW 3A-3 (July, 1930), in NW 32A-12 (August, 1932). In the first cistern mentioned above we found a wealth of objects in pottery and iron, including a number of figurines and a broken inscription. Two of these cisterns had broken into Bronze-Age caves, which they had utilized in whole or in part: a nearly empty cistern with a square shaft in SE 41A (used by the dyers in SE 42A-2), which only grazed the edge of the East Cave (above, § 11); a very large cistern which had been sunk squarely into the old Bronze-Age burial cave in NW 33 (see above, n. 1, § 27). The most interesting cistern was in SE 33A-15, next to the abandoned dye-plant in SE 23, described above. Like other cisterns in this area, it had been sunk through older strata: 5.20 m. of the six-meter shaft were lined with stones; the rest was in bed-rock. The top of the cistern was covered with a characteristic slab of stone with a round hole in the middle (Pl. 50, b; cf. the broken similar slab from another cistern, Pl. 50, a) and a "cup-mark" on the side. To the top of the cistern there led from the northeast a good stone channel

(constructed like a drain, but more carefully and with more use of plaster); just before this channel emptied into the cistern shaft there was a depression in it which may have served the purpose of a settling basin. This channel must originally have caught the water from adjacent roofs. A fine oval settling basin was found in connection with the cistern in SE 31A-9, which was only about five meters from the nearest of the two dye-plants in SE 32 and was undoubtedly employed by them. This settling basin was about 1.10 m. long and 0.80 wide, but tapered off toward the west, where an opening in the upper side of the settling basin communicated with the top of the cistern shaft. Into the other end opened a channel which came from under the street to the north. Since we have not yet excavated under floor-levels of Stratum A in this area, nothing further can be said about it. One may reasonably suspect that the settling basin was primarily designed to keep the water in the cistern as pure as possible for the dyers, with no particular sanitary purpose. The cistern in NW 3A-3 (probably used by the dyers in the adjoining room, NW 3A-4) was round, with a diameter of not quite seven meters. In its roof were two openings, a round one which had been blocked up in antiquity, and a secondary square opening, which was still covered with its original stone slab when we first discovered it in 1926. This cistern contained scarcely any debris—only a basket and a half of pottery altogether—and it must have been cleared out shortly before the last siege of the city. In it was found a complete iron sword, 62.5 cm. long, in five pieces, which must date from the final siege.

40. After the destruction of Tell Beit Mirsim B by the hordes of Shishak (above, § 23), the town was presumably rather slow in recovering from its ruin. Otherwise we should surely find more evidence of the re-use of B walls and foundations in Stratum A₁. Actually we have almost no convincing evidence of such re-use except in SE 14 and adjacent areas. Rehoboam omitted our site from the fifteen which he fortified (above, Chap. I, n. 5), all of which have now been identified. Since we cannot be certain whether these towns were fortified before or after Shishak's invasion, it is not clear whether T. B. M. was omitted because it had already been adequately fortified by David, because it was so thoroughly destroyed by Shishak that restoration appeared futile, or for some other reason. Above, § 6, we were able to deduce from the known facts that the two-meter casemate wall was built half a century to a century and a half after the construction of the narrower original casemate wall, that is, some time in the first half of the ninth century (cf. § 23). A plausible date would be somewhere in the reign of Asa (cir. 914-874 B. C., for which cf. above, Chap. I, n. 13), who is credited with having fortified a number of towns in Judah (I Kings 15: 23 and II Chron. 14: 6 f.; cf. I Kings 15: 22). Asa was remembered

cf. continuation in vol. 2 § 26

by tradition as victor over a large army led by a Nubian from Gerar, who penetrated into the Shephelah as far as Mareshah (Tell Sandahannah, north of Lachish) before he was defeated; for the probable historical nucleus see JPOS, 1924, 126 ff. It is, accordingly, probable *a priori* that he would fortify any strategically important undefended towns in southwestern Judah. About the same time was built the earlier A gateway of T. B. M. (above, § 8 and Fig. 1).

After the construction of the second casemate wall the town seems to have flourished considerably; it must have been at that time that house-construction with standing stones was introduced into general use, becoming almost universal at T. B. M. before the end of the eighth century (above, §§ 33-34). It was also about that time that phase delta of the West Tower, apparently the oldest one (though a phase epsilon is possible), was built and the town was provided with two gates instead of one. Above, § 28, we have shown, mainly on the basis of pottery, that a date about the second half of the ninth century for the original construction of the West Tower is certain, and have suggested the reign of Joash or Amaziah as a suitable time. A date under Jehoshaphat (cf. II Chron. 17:12, which unfortunately uses the late word *bîrânîyôt*, from Aram. *bîrtâ*, "fortress, citadel," so we cannot be sure that the source of this information is really good) is not impossible, though scarcely likely. At all events T. B. M. was certainly at the summit of its prosperity in the eighth century, to which phase delta of the West Tower and the abandoned dye-plant in SE 23A-10 (above, § 36) unquestionably belonged. It is almost certain, in my judgment, that the town suffered severely during Sennacherib's invasion in the summer of 701. The neighboring town of Lachish, which was much more strongly situated and fortified, was stormed by Sennacherib during this campaign, as we know from the explicit concurrent testimony of the Bible, Sennacherib's own reliefs with accompanying text, and Starkey's excavations. Since T. B. M. is less than eight miles in a straight line from Tell ed-Duweir (Lachish), it can scarcely have escaped partial destruction. Moreover, Sennacherib tells of having taken 46 fortified towns of Judah by storm, a statement confirmed by the explicit statement of II Kings 18:13 that the Assyrian king captured *all* the fortified towns of Judah. For a survey of the literary evidence see especially Dougherty's paper "Sennacherib and the Walled Cities of Palestine" (JBL, 1930, 160-171), which makes it clear that the destruction, though widespread, was partial (p. 166); Dougherty's conclusions have been strikingly confirmed by the excavations of Starkey at Lachish (Starkey's deductions remain in the main unpublished, owing to his premature death). Before 701 the population of the town seems to have overflowed into the high

land south of the town; cf. above, § 24. We do not know how rapid the subsequent decline was, since there are too few places where clear stratification may be observed. However, the evidence now available suggests that real decline did not set in until the last decade or two of the history of T. B. M.

There is a considerable amount of evidence bearing on the vicissitudes of our site during the last period of its history. At the West Tower we have three phases of construction (gamma, beta and alpha) dating from the period 701-589 B. C. In SE 12 and 13, 22 and 23, north of the street, there is an area of some extent where older walls of A, destroyed by fire (traces of which were unmistakable, as I noted June 27, 1930), were replaced by coarser walls on new foundations. These new walls were built in large part (at least in their foundations) of large stones, entirely different from the stones of older and contemporary house walls elsewhere on the site, but identical in average size with similar stones in the city-wall and especially in the fortress in SE 20 and 21 (above, § 32). The strength of the new foundations, though only one stone thick, may be gauged from the fact that they still rose about half a meter above the level of the surrounding terrain when we began excavation. Now, since the city-wall is known to have been standing in the last short phase of the history of T. B. M., it is most improbable that these stones came from it; the only remaining source is precisely the adjacent fortress to the north, the southern wall of which may have extended to within 15 m. of the edge of our area. The probable deduction is that this fortress was destroyed at the same time as the burned area in SE 12 and 22. The destruction in question was partial, since it does not seem to have particularly affected the houses across the street to the south. The pottery of the lower level in this area is identical in character with the pottery above it, and the latter includes two stamped jar-handles bearing the impression of the seal of Eliakim, steward of Joiachin, which must be dated between 598 and 589 B. C.⁹ Since the West Tower can

⁹ See especially my article, "The Seal of Eliakim and the Latest Preëxilic History of Judah, with Some Observations on Ezekiel" (JBL LI [1932], 77-106). The main contention, that *Ywkn*, which I vocalized *Yaukin*, of the seal is king Joiachin of Judah (a view originally advanced by Père Vincent immediately after he had examined the first jar-handle with the stamp in question), and that the seal was used by his steward during the first years of his Babylonian captivity, when he was still considered as king *de jure* by the men of Judah, has since been conclusively demonstrated by Weidner's publication of tablets (one dated 592 B. C.) from the reign of Nebuchadnezzar mentioning him by name and calling him king of Judah (*Mélanges Dussaud*, II [1939], 923-935). His name is written *Ya-u-ú-kinu*, *Ya-u-kinu*, *Ya-ú-[]* and once by mistake *Ya-ku-ú-ki-nu*, so there can be no doubt that, given the peculiarities of Neo-Babylonian orthography which have been pointed out in detail by Ungnad, Gordon, Hyatt and Poebel, the cuneiform spellings all reflect a pronunciation *Yaukin*—i. e., exactly the form which

scarcely have escaped destruction by fire at a time when the fortress in the center of the town was burned, we may safely attribute the end of phase beta to the same catastrophe, which was probably contemporary with the penultimate partial destruction of Lachish (on which see especially Starkey, PEQ, 1937, 235 f., and Inge, PEQ, 1938, 251 ff.).¹⁰ I have already pointed out (*Bulletin*, No. 61, 16; 73, 16) that it is difficult not to combine the two final destructions of the fortifications of Lachish with the corresponding phases at T. B. M. In view of subsequent work at Lachish this combination has become almost categorical; for the historical background of the invasion in 598 B. C. see my sketch, JBL, 1932, 86-93. When Nebuchadnezzar's general invaded Judah after Joiakim's rebellion in 599 he stormed T. B. M. and destroyed both the West and (probably) the East Gate, as well as the fortress in the center of the city. Most of the town escaped demolition at this time.

Can we now proceed to fix the date of the destruction of phase gamma of the West Gate? My earlier view that it was gamma, not delta, which was destroyed in 701 B. C. (e. g., *Bulletin*, No. 61 16) is not tenable, and we have already seen above that it was almost certainly delta which was then destroyed. However, the pottery evidence rather favors a date well back in the seventh century for the end of gamma, especially in view of the important sherd (above, n. 1), which suggests a date not far from 700 B. C. Gamma may have come to an

I had reconstructed seven years earlier. Several additional seals where *N 'ebed N'* is to be rendered "N official of (king) N'" have also been discovered since 1932; e. g., the seal of an officer of Mitint son of Šidqâ, king of Ascalon (Bergman, JBL, 1936, 224 ff.), and the seal of an officer of king Ahaz of Judah (Torrey, *Bulletin*, No. 79, 27 f.). The article of the late Samuel Klein in BJPS V (1937), 98-101, in which he tries to equate the Eliakim of our seal with the Yôqîm (= Yôyâqîm) of I Chron. 4: 22, on the ground that the name Yôqîm might interchange with the name Elyâqîm, just as in the name of the father of king Joiachin, and that this Yôqîm was chief of the potter's guild in his time, is ingenious but fanciful in the extreme; it can now be demonstrated that the kings of Judah were accustomed to bearing alternative names, a personal name and a throne-name, like the pharaohs of Egypt (cf. JBL, 1932, 85 f., n. 25, and note that there is another example, besides the six listed: *Abiyâm* and *Abiyâhû*, the former being parallel to the name *Ahiyami* of Taanach). Moreover, the steward of Joiachin cannot have been identical with the head of the potter's guild, even admitting that the latter was a contemporary of the former, which is not established.

¹⁰ However, it must be said that the excavators may not have clearly distinguished as yet between the successive destructions under Sennacherib and Nebuchadnezzar. For example, the tremendous destruction inside the city, which was followed by much thinner occupation, may date from the time of Sennacherib, as strongly suggested by finding eighth-century objects in the debris of this destruction, whereas the penultimate destruction of the gateway may date from the year 598 B. C. Note again that we have a precisely analogous situation in some loci at T. B. M.

end somewhere in the first half of the seventh century, either in the second campaign of Sennacherib against Judah or in connection with Manasseh's rebellion. Since both episodes are historically obscure and since the evidence at our command is inadequate, it is better not to attempt any more precise determination.

In characterizing the violence of the final onslaught, in which T. B. M. met its definitive end, I can do no better than to quote my words at the end of Chap. II of APB (p. 126):—"How terrific the conflagration by which it was destroyed may have been can be gauged by the fact that limestone was calcined and slivered, while adobe was burned red; the ruins were saturated with free lime, which the seepage of water caused to adhere to pottery and other objects until they became coated with a tenacious crust of lime."

How hath she dwelt alone—the town which was so peopled!

CHAPTER III

STRATUM A: OBJECTS OTHER THAN POTTERY

41. Considerable numbers of fertility figurines were discovered in Stratum A, all of the pillar type often called *dea nutrix* from the fact that the figurine shows a woman presenting distended breasts, which she supports with her hands. Thirty-eight recognizable examples were found, some of them broken into a number of pieces. A good many other fragments were found but were so shapeless that no record was kept. One example (Pl. 29:12-12a = 56:3) was entirely preserved; another (Pl. 31:6) was virtually complete and still another (Pl. 57, c:3 = TBM II, Pl. 25:10) was complete except for the base. The following list includes all the serial numbers; those which are reproduced in TBM II¹ or III are marked with an asterisk: S. N. *29, *84, *193, *523, *527, *543 (all in TBM II, Pl. 25:8-13 and below, Pl. 57:1-3, 5-7), *881, *908, *909, *986, *988, *1019, 1024, *1119, *1228, *1282, *1328, *1329, *1332, *1383, 1388, *1468. *1544 (which are illustrated in Pl. 31:1-15 and 54B:1-12), *1803, *1804, *1805, *1808, *1817, *2004, *2105, *2295, *2296, *2313, *2360, *2396, *2406, *2450, *2548 (for which see Pl. 55:6-11; 56:1-9; 29:12). Heads were particularly numerous, being easier for our laborers to identify than bits of torso or base, and having been perhaps kept in antiquity after the rest of the figurine was broken. All but two of the recorded pieces belong to the standard type, with face impressed from a mould and the rest of the figurine modeled by hand; the two exceptions were very crudely made by hand (as S. N. 1282 in Pl. 31:7 = 54, B:9). It is not necessary to describe the technique of manufacture here, since this will be done in detail below, §140. Stratigraphically none of the figurines can be dated *with confidence* before the eighth century (S. N. 1328 from Silo 32 in SE 13A, and a few others with less probability) and the majority of them come from the last century of Stratum A.

The comparative material is very extensive, but comes mainly from southern Palestine. The oldest datable example of our class was found by Mackenzie in Tomb 1 at Beth-shemesh (APEF II, Pl. XXIII), which can be dated by its pottery between 950 and 850 B. C. A date in the early ninth century may be considered as highly probable. It resembles our figurines from T. B. M. so closely that no chronological deductions with regard to the direction of evo-

¹ Since the serial numbers corresponding to the numbers of Iron-II figurines on Pl. 25 in this volume were not included in the index on p. 95, we list them here: Pl. 25:8 = S. N. 193; 9 = 523; 10 = 527; 11 = 543; 12 = 29; 13 = 84.

lution seem to be permissible—except that some of our examples were made from much more artistic moulds and show a higher development of Phoenician sculpture. For other examples from Beth-shemesh see Wright's remarks, ASE V, 155 f. At Megiddo the type in question is represented exclusively by heads, but there can be no doubt that the body of a considerable number of figurines belongs to the pillar class. May's figurine, MRMC, Pl. XXVI, M 1776, picked up on the surface, seems to resemble our seventh-century examples rather exactly. On Pl. XXIII May has grouped eight heads (including one mould) which are clearly of our type, though the technique used is a little different in several cases. These heads belong mostly to Strata II or I where provenience is known; since the examples attributed to I have much longer bangs of hair than the others, the stratification is probably correct. Stratum II dates from cir. 733-609 (see Chap. I, n. 1) and is thus contemporary with most of our figurines from T. B. M. One example dates from Stratum IV (ninth century), being thus roughly contemporary with the example from Beth-shemesh, Tomb 1. It will perhaps be possible eventually to establish a relative chronology on the basis of the coiffure employed in the imported moulds. That the latter came originally, at least, from Phoenicia may be considered certain, cf. Müller, *Frühe Plastik in Griechenland und Vorderasien* (1929), pp. 149 ff. and 162 ff., as well as below, §140.

157/ 42. The finest artistic object found in Stratum A was undoubtedly the steatite ceremonial object illustrated Pl. 59, a-b, in photo (see also *Bulletin*, No. 47, 11), and Pl. 28:1-3 in drawings. In form it is a kind of ladle, one end of which projects from the head of a lion in such a way that the ladle becomes a continuation of the lion's lower jaw. A curious touch is the appearance of the lion's lower incisors as two small cones projecting through the bottom of the ladle (Pl. 28:2). The lion's eyes were probably represented by some kind of inlay set in the now hollow sockets. From the back of the lion's head projects the broken end of a pipe, which was originally longer and which communicated through a passage in the lion's throat with the ladle. The pipe must have been fitted into a longer one of wood or bone. The back of the ladle is covered with an intricate pattern of volutes and palmettes. Unhappily the object was discovered (in two pieces, found six days apart) in ancient debris at locus NW 32A-13, so there is little by which to date it stratigraphically within Stratum A.

Attention was first drawn to this curious class of objects by St. Przeworski, in an important paper published two years before our find ("Les encensoirs de la Syrie du nord et leurs prototypes égyptiens," *Syria*, XI, 133 ff.; see also *Syria*, XV, 223 ff.). Since then it has been repeatedly discussed, notably by Watzinger (DP I, 108 f.), May (MRMC 18 f.) and Sjöqvist (*Problems of the*

Late Cypriote Bronze Age, Stockholm, 1940, pp. 52-54). Przeworski has described a group of ten objects of the same type, five from excavations at Zencirli and near Carchemish in northern Syria, one from Assur, and four others in various museum collections. Eight of the ten are known to have come from northern Syria (see below). All have ladle form and a pipe at one end; all are of steatite. Three of the ten have the same lion decoration as ours; two others have volute ornament on the back, though less complex than ours. None of the ten is equal to our piece in complexity of design or beauty of execution. At least four of them have a human hand carved in relief on the bottom of the ladle, representing the latter as a bowl held on the outstretched palm. In addition to those published by Przeworski three have been published from the Megiddo excavation: two whole pieces, one with the hand decoration, the other with a cruciform ornament which also occurs in northern Syria; a broken piece, also with the hand ornament (MRMC, Pl. XVII). At Tell ej-Judeideh and Chatal Hüyük and in the Plain of Antioch McEwan has found a number of specimens, two or three of which I saw at the expedition camp in 1935 (cf. MRMC 19, Fig. 4). At Megiddo and in the Plain of Antioch all reported examples are of steatite; a Megiddo specimen of similar appearance but in ivory was probably employed for quite a different purpose.² The chronology of the Megiddo specimens in steatite (disregarding the fragment) is fixed in Strata III or II, i. e., between 800 and 600 B. C. The Judeideh examples are dated in Stratum IV, 1000-500 B. C. (Braidwood, *Mounds in the Plain of Antioch*, p. 6). Przeworski's date for his pieces between 1200 and 850 B. C. is in general too early.³ The examples found at Zencirli presumably belong to the period of the latest palaces, from the late ninth and eighth centuries. A date not later than the eighth century would undoubtedly be most satisfactory for the T. B. M. piece, which was found in ancient debris, perhaps from the partial destruction under Sennacherib (above, §40). Some help in dating can probably be derived from analysis of the complex pattern of volutes and palmettes. It begins in Egypt in the New Empire and spreads rapidly to Syria, where we find it already well represented in the complex volute-palmette ornament which is already characteristic of the Megiddo ivories (Loud, *MI*, Pl. 34-35, especially Figs. 166, a-b) in the early twelfth century. Between the Megiddo ivories, which are still very Egyptian in their graceful curves, and the hard stylization of our steatite object, must lie a considerable period of artistic development. On the other side lie Cypriote capitals and steles with

² It must be remembered that this seems to be the only example of this class which is not of some material refractory to ordinary fire.

³ In *Syria*, XV, 224 f. Przeworski lowers his date, and correctly attributes these objects to the first centuries of the last millennium B. C.

the volute-palmette which have been collected by Perrot and Chipiez (*History of Art in Phoenicia and Cyprus*, I, Figs. 52, 53, 152; II, Fig. 85). These patterns have all been stylized along lines closely parallel with the development of the Ionic capital, and stand at least as far from our T. B. M. piece on the other side. They are usually dated about the sixth century B. C. In the middle lie the columns of alternate volutes and palmettes on ivories from the time of Hazael (late ninth century, *Arslan Tash*, Pl. XXVII, XLV), which are further evolved architectonically than our T. B. M. piece, but also exhibit the curious bundle of ears of grain (?) characteristic of the latter. All things considered, I suggest a date about the ninth century for the T. B. M. object.^{3a}

The purpose is still rather obscure. Przeworski (p. 140) called the objects "censers" and supposed that the tube served as a blow-pipe to blow air into the bowl, in which incense had been placed, in order to keep the incense burning and diffuse the perfume. Six years later I proposed a variation on the same theme by suggesting that the object was used something like a tobacco pipe, to burn the incense by drawing oxygen-laden air through it from outside by inhalation for therapeutic purposes, presumably in connection with medico-magical rites (JPOS, 1936, 57). Since the objects are all of steatite (cf. n. 4 for an exception) they are refractory to heat (the reason why steatite was so popular as a nucleus for glazed scarabs)—steatite is used by the Arabs today as a favorite material for the bowls of tobacco pipes. Later I gave this view up, adhering to the position of McEwan and Woolley that these objects were inserted into the necks of lentoid flasks and used for libations (TBM II, 67, n. 9), but the refractory material of which they were made and their weight, which would make them very awkward to hold in place and to handle in such a way that the liquid would not be spilled by accident, render this view improbable, in my present opinion. I therefore return to the view stated in 1936, that they are neither censers (*sensu stricto*) nor libation bowls, but pipe-bowls. In favor of the theory that they were used with some kind of incense is the fact that they are certainly derived from the arm-censers of the Late Bronze, a dozen of which have been found in Cyprus (Sjöqvist, *loc. cit.*) and five of which have been discovered at Boğazköy (Bittel, *Boğazköy: die Klein-funde der Grabungen 1906-1912*, 25 f.), with others from Ugarit (*Syria*, X, 299, Fig. 3) and 'Atshânah (*Antiquaries Journal*, XVIII, 12 f. and Pl. XVII, 1). Any doubt about their origin and use is dispelled by numerous examples from Egypt, discussed by Wigand, *Thymiateria* (*Bonner Jahrbücher*, 122), 9 ff., and Przeworski (*loc. cit.*): these objects begin in the Middle Empire, shortly after 2000 B. C., and last down into Graeco-Roman times. The oldest

^{3a} The closest parallel to our object yet published is Loud and Altman, *Khorsabad*, II (1938), No. 257 on Pl. 64, which cannot be later than the eighth century.

example of the class hitherto found outside of Egypt (not yet known to Sjöqvist) is a faience specimen from a Ugaritic tomb of about the eighteenth century B. C. (Schaeffer, *Syria*, 19, 241, and Pl. XXII, 2); the hand appears in relief on the bottom of the incense bowl.⁴ As in many of the Egyptian examples, there is no pipe, however, so the object must have been waved in the air.

43. Inscriptions in Stratum A were of two kinds: graffiti carved on pottery after baking and before breaking; inscriptions of seals which had been stamped on the handles of large jars. Though we searched patiently for ostraca, i. e., sherds inscribed in ink, not one was found. Our failure to find any was probably due rather to the fact that most sherds in A were covered with a deposit of lime than to the total absence of ostraca. Since the lime could not be removed except by scraping or plunging into an acid solution, either of which would have destroyed most traces of ink, there was no way to avoid the impasse. Five bits of inscription incised in the walls of vases were discovered in A, all drawn in TBM I, 77, Fig. 12, and shown in photo below, Pl. 60: 2-6. No. 2, originally containing the words *bt l-mlk*, "royal bath," dates from the eighth century; it has been discussed above, § 36 and n. 7. No. 3 was found in the cistern under SE 33A-15 (see above, § 39); it doubtless stands for *l-z[yhw]*, "belonging to Uzz[iah]," or *l-z[ryhw]*, "belonging to Az[ariah]"; epigraphically the characters are merely stiff renditions of the cursive hand characteristic of the seventh century B. C. and need not date more than a decade or two before the fall of the town. No. 4 is an isolated sherd from SE 4A-4, dating presumably from the seventh century; it reads *l-H[zq][yhw]*, "belonging to Heze[kiah]." No. 5, in three sherds, was found in SE 23A-7 below the level at which S. N. 860 (a handle with the Eliakim stamp) and S. N. 867 (with the royal "winged scroll" stamp) had been found the preceding day. Both the drawing and the photo have been thoughtlessly oriented so as to conceal the downward slant of the shafts of the letters toward the right. There can be no reasonable doubt as to the reading *[l-][G]r*, since the horizontal line of *gimel* bears exactly the same relation to the head of the following *resh* that *gimel* does in the Siloam Inscription, lines 2 and 4, in *grzn*; the exaggerated length of the shafts is characteristic of the eighth century, to which we may safely date the graffito. No. 6 was inscribed by chipping with a small pointed instrument; the three sherds were found in different, but adjacent loci, two in SE 13A-6, one in SE

⁴ It is tempting to identify these incense bowls with the portable incense container called *kaf*, "palm of the hand," in Hebrew (mentioned in connection with both Tabernacle and Temple of Solomon), and I have made this identification in *Bulletin*, No. 47, 16. On the other hand, the word also means "bowl, basin" in several cognate languages (Accad. *kappu*, *kippatu*, Aram *kappēîā*, etc.), so the coincidence of design and name may be purely accidental.

12A-7. The peculiar stance of the *mem* is obviously caused by the maker's changing the position of the jug between letters. The name may be read either [N]*hm* or [Mn]*hm*, the forms of the letters pointing to a date in the seventh century.

Though every handle was closely examined, we found only four jar-handles bearing the royal stamp: three of the "flying scroll" type (TBM I, Pl. 40:4; below, Pl. 29:8, 10) and one of the four-winged scarab class (TBM I, Pl. 40:3), all inscribed *l-mlk Hbrn*, "belonging to the king — Hebron." The paucity of these handles is surprising, especially when we remember how many have been found at Lachish (see below) and Beth-shemesh, to say nothing of Mareshah, Azekah, Libnah (Tell eš-Šâfi) and Tell ej-Judeideh. Since this paucity cannot be explained chronologically or because of the restricted extent of our work, it may have some economic reason. E. g., T. B. M. may have been off the beaten track of domestic trade in Judah and may have traded mainly with the Philistines. Thanks to the model study by Diringer of 170 stamps of this group which were excavated at Lachish in the years 1933-38 (PEQ, 1941, 91-101, with Pl. VI-VII), we are now in a greatly improved position with respect to their interpretation. He has meticulously distinguished three classes according to typology and epigraphy: an archaic class of the four-winged scarab type, with greater detail in the execution of the scarabs and with definitely greater epigraphic archaism (long shafts and archaic forms of letters); a later stage of the same type, with summary treatment of the scarabs and with wider and shorter, but more precise and less archaic lettering; the "winged scroll" type (my terminology), which resembles the preceding class both artistically and epigraphically (but shows still further development epigraphically). Diringer is definitely right in insisting on the chronological significance of this division into classes; I should date the first class epigraphically about the time of Hezekiah (cir. 714-686), after the Fall of Samaria (722/1 B. C.), both for the epigraphical reasons already mentioned and because it is probable that the stamped jars follow the jars incised with the inscription *bt l-mlk*. Another strong argument is that the stamped jar-handles are totally lacking in preëxilic North-Israelite sites, where we should expect some examples (e. g., at Bethel), or at least analogous stamps. The third class unquestionably belongs to the end of the Kingdom of Judah, as may be illustrated by the fact that all five stamps found at Gibeah belong to it; the fortress at Gibeah is now known to have been destroyed toward the end of the Monarchy of Judah. The second class, chronologically intermediate, may then be attributed to Manasseh (cir. 686-641), and the third to Josiah and his successors (cir. 639-587). It may be remarked that I have long contended that the four-winged type was the earliest (most recently TBM I, §78); our

example belongs to Diringer's first and earliest class. For the question of interpretation see the literature quoted by Diringer (*Iscrizioni antico-ebraiche palestinesi*, pp. 155 ff.), to which may be added Watzinger, DP I, 116 f. (useful for the Assyrian affiliations of the symbols), and Inge, PEQ, 1941, pp. 106 ff. As shown in detail above (Chap. II, n. 7) Inge's interpretation of *l-mlk* as standing for *bt l-mlk* cannot be maintained; the Lachish jar of the *l-mlk* type had a capacity about twice as large as the jar inscribed *bt l-mlk*, and hence presumably held two baths. I should now modify my view of many years that the four towns mentioned in these stamps (now counted by the hundreds), Hebron, Ziph, Socoh and *Mmšt*, were district capitals in the pre-exilic state of Judah (JPOS, 1925, 45 ff.) slightly in the direction of Clermont-Ganneau's view (PEFQS, 1899, 204 ff.) that they were royal store-cities (Heb. *'ârê mîskēnôt*), in which the taxes in kind were stored. This explains why each town appears most frequently, as a rule, in the immediately adjacent region. E. g., only Hebron appears at T. B. M., and it occurs in 70.8% of the 170 handles at Lachish,⁵ whereas in the sites of the central Shephelah it appears only 23.5% of the time while Socoh in the north-central Shephelah occurs 39.2% of the time. This evidence is important for the location of *Mmšt*, which was not in the Negeb at Kurnub, ancient Mampsis, as I formerly supposed, but somewhere in the north of Judah,⁶ since it has a frequency of only 4% at Lachish, of 19% (half that of Socoh) in the central Shephelah, but occurs more frequently than any other type at Gezer (G II, 210), while it is among the most common names on the royal stamped jar-handles of Jerusalem and Gibeah (Tell-el-Fûl).^{6a} It is improbable that these towns were the sites of royal potteries, since they are not mentioned at all in the list given in I Chron. 4:23; on which cf. JPOS, 1925, 50. On the other hand, our vases, which seem identical in clay and technique, may well have been manufactured in these royal potteries.^{6b}

⁵ Diringer's statistics on p. 101 are curiously distorted. In the first place, he should have given the percentage of *legible* pieces represented by each name, since there were only four names in all. In the second place he has made some inexplicable mistakes in computing percentages for the mounds of the Shephelah; the results are not even relatively correct, since *Mmšt* comes out far in the lead in percentage, though it is close to the bottom in relative number of pieces found!

⁶ Since *Mmšt* must have been in a district which produced an abundance of wine and oil, I should provisionally locate it in the region between Gezer, Zorah and Ajalon. The name is doubtless the same as that of Mampsis (presumably from the Hebrew stem *mšy*, "to draw," which also appears in Ugaritic and perhaps in Phoenician).

^{6a} McCown kindly informs me that the frequencies of two-winged examples at Tell en-Naşbeh are: *Mmšt* 10, Ziph 9, Hebron 5, Socoh 4. At Beth-shemesh, on the other hand, almost all examples are from Hebron (Hebron 12, *Mmšt* 1); see ASE V, 84.

^{6b} [See on these stamps now also Sukenik, *Qedem*, I, 32 ff.]

But 5 Hebron stamps
and 1 Lachish
Total of legible
Hebron 24
Lachish 25
Socoh 11
Gezer 19

44. A number of undoubted weights were discovered in Stratum A, but unfortunately none was inscribed, in striking contrast to the situation at Beth-zur, for example. However, the weights found in the West Tower (see above, §30) are interesting because of their official location, and a perfectly preserved piece in polished limestone is in some respects the most important weight ever discovered in Palestine, since it seems to fix the weight of the shekel more accurately than any other weight yet known. The weights from the 1926 and 1928 campaigns were weighed on a pharmacist's balance, those from 1930 and 1932 on a jeweler's balance in the Palestine Museum. S. N. 147, a hemispherical weight of polished limestone (Pl. 57, d:1), weighs 4,565 grams. This weight undoubtedly represents 8 minas or 400 shekels (50 shekels = a Canaanite mina, from Late-Bronze Ugarit on down), thus yielding 11.41 gr. as the weight of a shekel.⁷ With this compare Macalister's result, 11.3 gr. = 1 shekel (G II, 287), Viedebant's 11.44 (ZDPV, 45, 1922, 17), and Barrois's 11.47 (RB, 1932, 64), all inductively derived.⁸ That this weight approaches very close indeed to the theoretical "standard" may be inferred from the fact that a cubic bronze *pym* weight published by the late G. A. Barton (cf. Viedebant, p. 5, No. 21) weighed 7.609 gr. (originally a very little more, since Barton mentions some insignificant nicks), which would yield exactly our shekel. S. N. 142 (from the same place) is a spheroidal or hemispheric weight of polished quartz, slightly chipped, and weighs actually 259 gr., with an estimated shortage of 10 gr., or a little more. Since the half mina of the standard just treated, would be about 285 gr., this weight probably represents a half mina, though a little light; the shekel deduced from it would weigh only 10.76 gr. or a little more, instead of about 11.4, as it should weigh. A particularly interesting specimen from the West Tower is the unfinished hemispherical weight of limestone, S. N. 159 (Pl. 57, d:2), which had been pounded into approximately the right shape and size, but had not yet been polished. Since it weighs 12,628 gr., i. e., about 10.7% too much for 20 minas (properly about 11,412.5 gr.), about 3 mm. would have to be ground off the entire surface of the stone in order to bring the weight down to the correct amount.⁸

⁷ In this connection attention may be called to a large spheroidal weight of the same material and form from Samaria (I, 344), which measures 10.6 cm. in height and 12.4 in diameter, comparing with 11.0 cm. and 15.6 for our eight-mina weight. Unfortunately the Samaria pieces were never weighed. However, the ratio of 6.2³:7.8³ indicates a relationship of about 238.3 to 474.6 in volume, i. e., almost exactly 1:2. The Samaria weight then presumably represented four minas.

^{7a} Cf. also the weights reproduced ASE IV, Pls. 52-53, and described by Wright, ASE V, 159 f. A shekel weight (Pl. 52:31) weighs 11.43 gr.

⁸ Lidzbarski's explanation of the origin of the spheroidal (hemispheric) form, quoted by Viedebant (loc. cit., p. 15), is thus wrong. It was too artificial to begin with.

In the following table I have given the rest of the material in this category from Stratum A. Some of these "weights" may be merely rubbing stones or the like, while pieces discarded because of their poor shape may have been used as weights. So much confusion has, however, been introduced into the subject by including too much uncertain material (e. g., by Petrie's methods of "shot-gun induction," on which cf. TBM II, 57, n. 67) that I have erred on the side of caution.

1.	S. N. 1141	9.75 gr.	haematite	oblong to oval, upper edges rounded (2.25 by 1.3 cm.)
2.	1001	11.5 °	limestone	hemispherical (ht. 1.7, max. d. 2.0)
3.	1049	45.0	haematite	hemispherical (ht. 2.4, max. d. 3.5)
4.	(5-4-26)	45.0	limestone	hemispherical
5.	S. N. 136	48.0—	limestone	irregular ovoid with flat bottom (some- what lime-encrusted)
6.	960	48.9	limestone	hemispherical (ht. 2.8, max. d. 3.7)
6a.	959	—	limestone	(see below, §55)
7.	698	56.0	limestone	conical (rubbing stone or game-piece?), ht. 4.2, max. d. 3.5
8.	753	62.0	diorite (slightly abraded)	hemispherical (ht. 2.6, max. d. 4.15)
9.	276	63.0	diorite?	hemispherical (ht. 2.7, max. d. 4.0)
10.	101	89.0	limestone	hemispherical (ht. 3.4, max. d. 4.0)
11.	1070	89.0	limestone	hemispherical (ht. 3.4, max. d. 4.2)
12.	485	89.5 +	limestone (abraded slightly)	hemispherical (ht. 3.6, d. 4.0)
13.	2155		limestone	inverted truncate cone with dome (Bar- rois' "tronconique"), ht. 3.2, d. 4.2
14.	2239	181.05	limestone (slightly abraded)	as preceding (ht. 4.4, d. 5.5)
15.	194	174 +	haematite (burned and splintered slightly)	hemispherical (ht. 3.0, d. 5.0)
16.	864	436.5	limestone	spheroidal with flat top and base (ht. 5.5, d. 7.0)

Photographs of these weights appear as follows: No. 1, Pl. 63:19; No. 3, Pl. 63:17; No. 6, Pl. 63:14; No. 8, Pl. 63:23; No. 11, Pl. 63:16; No. 13, Pl. 64:17; No. 14, Pl. 64:14; No. 15, Pl. 63:24; No. 16, Pl. 63:15. No. 16 is beautifully shaped and was undoubtedly intended as a weight; it was found

° S. N. 1585 and 1586 are two little hemispherical weights from a room in the patrician house of Stratum D (TBM II, 35 ff.), SE22D-7, which have not been published; one is of dark red stone (S. N. 1585), the other is of white limestone. Both measure exactly the same, 1.7 cm. in height and 1.7 in maximum diameter; their weight is, respectively, 11.5 and 10.45 gr. They may safely be taken as one-shekel weights.

rather low in Stratum A and may belong to the earlier part of the period. The standard seems to be a shekel of 10.9 gr., in which case it represented 40 shekels, or four-fifths of a mina (western system). The smallest example included in our list, No. 1, may not be a weight at all; No. 2 evidently represents a shekel. Nos. 3-5 are 4 shekels each, reflecting a standard of about 11.25 gr. to a shekel. The material of Nos. 8 and 9, which was particularly suited for pounding and rubbing, makes them suspect. Nos. 10-13 again represent 8 shekels each, based on a theoretical 11.1-11.2 gr. to a shekel. No. 14, though crudely formed, can scarcely be anything but a weight; it reflects a theoretical standard of 11.3-11.4 to a shekel (depending on the estimated abrasion, very slight in any case).

45. Iron tools and weapons are illustrated on Pl. 61 (also Pl. 63:27). The actual number of pieces of iron, whole and broken, was very much larger, but they were either so badly rusted or so uniform in type that there does not seem to be any object in illustrating more. The best pieces were found in cisterns (cf. above, §39). By far the greatest proportion of identifiable fragments came from sickles like the three complete specimens in Pl. 61 (8, 9 and 13). Plow-points were also common; cf. Pl. 61:1-4 (all found together in the cistern in SE 33A-15) and 14-15, found in different houses. Pl. 61:14 (seen from above) is a very well preserved example. From the same cistern as above came two long, slender, pointed tools (part of one shown in Pl. 61:5), measuring 17+ by 4 (max.) cm. and 15+ by 4.5 (max.) cm. respectively; a long tapering socket runs into the tool from the thick end, and in the second example this socket was still full of decayed wood. There can be little doubt that these tools are the tips of ox-goads, like the bronze specimen described above, §20. They were doubtless excellent weapons for occasional use against wild beasts or hostile raiders. Pl. 61:10 is broken at the end; it may have been a skinning knife (scarcely a trowel); cf. Petrie, *Tools and Weapons*, Pl. XXXIII, K 1 ff., and XXXI, K 1-6 and my remarks, *Bulletin*, No. 73, 12. Pl. 61:16 and 17 are also broken iron knives: No. 16 is a small, but nearly complete knife in three pieces, 10.7 cm. long, with three rivets (two of which are preserved on the thicker end, toward the right of the photo); No. 17 is part of a much longer and broader knife with a rounded end, perhaps a razor. Pl. 61:11 is one of two socketed wood-worker's iron chisels; it is 14 cm. long, with a tapering socket extending about half-way from the blunt end in order to receive a wooden handle. The second piece was only half preserved.—Among other iron tools found in the same cistern in SE 33A-15 as the first tools mentioned above, were two badly preserved axe-heads (S. N. 684 and 685), about 13 by 4.5 cm. and 15 by 5 cm., respectively, and pieces of one or two

stone-mason's hammers (S. N. 689), very badly preserved. From the same cistern came also an iron ring (S. N. 682) complete in four pieces (curved until the ends nearly met), 14 cm. in diameter and about 1.5 cm. thick (perhaps a bull's nose-ring), as well as two hooks (S. N. 683 and 688), one apparently complete, in three pieces with maximum span of 19 cm. and thickness of about 2.5 cm. Two very curious pieces (S. N. 686 and 687) were iron rods about 2.5 cm. thick, at least 25 cm. long, with one end bent over to form an eye (the center of which was on a line with the inside edge of the rod). These pieces were evidently part of some relatively complex apparatus which I cannot identify. In spite of the bad state of preservation in which iron objects nearly always appear, a thorough study of these objects would undoubtedly yield a much clearer picture of a subject which is still obscure.

46. The finest iron weapon from Tell Beit Mirsim was the well-preserved sword, Pl. 61:12, which was found in the cistern in NW 3A-3, into which it must have been thrown during the final siege cir. 589 B. C. (see above, §39). This sword was some 62.5 cm. long, complete in five pieces, with a maximum width of 4.8 cm. It was single-edged and slightly curved, with five rivets for the attachment of the handle. From the cistern in SE 33A-15 which yielded so many tools came also the two socketed iron spear-heads, Nos. 6 and 7. The largest one, No. 7, was found without a tip; its original length must have been about 45 cm. Iron arrow-heads were extremely common, but they were generally so badly rusted that it does not seem worth while to reproduce more than a few. The best preserved single example is Pl. 61:20, which may be a Chaldaean arrow from the final siege of the town. The central rib, otherwise very rare in ancient Palestine before Persian times, is attested in Assyrian arrow-heads (cf. Petrie, *op. cit.*, p. 34, §88, on Pl. XLI:32, and especially on arrow-heads from the Chaldaean and Persian age in Egypt [from Defenneh and Memphis, Pl. XLI:41-44 and XLII:237]). Pl. 63:27 is a characteristic local arrow-head with a knob on the tang to hold the head firmly on the shaft; cf. such examples as *Megiddo* I, Pl. 80:33-4 (from Stratum III, in the eighth century). It should be added that by no means all iron arrow-heads found at T. B. M. were provided with this knob.

47. Bronzes were extremely rare in Stratum A, illustrating the well known fact that iron, once introduced, rapidly became so cheap in comparison with bronze that it drove the latter practically out of the market, so far as common folk were concerned. In the case of small objects there is also a possibility in some cases that they were found out of context. The best single object of bronze was a perfectly preserved fibula (Pl. 64:5) of the triangular carinated ("knee") type which replaced the bow type (above, §20) not far from 900

B. C. The way in which the pin is coiled to form a spring, one end of which is inserted into a socket in the handle and soldered in place, while the other is held in place by a sheath shaped like a human hand, is characteristic. Examples are numerous: cf. *Megiddo* I, Pl. 78:13 (Stratum I[?]), Pl. 79:11 (Stratum III); *Gerar*, Pl. XVIII:14, etc. (Petrie's class B [p. 11] which runs from level 194 to 199, i. e., from ± 800 to ± 600).—An interesting fragment of a larger strip of elaborately incised bronze (or copper) is shown Pl. 64:7, with a detailed drawing of the pattern Pl. 28:4. There can be no doubt about the Phoenician origin of the pattern, which seems to consist of volutes, palmettes and leaf ornament; cf. above, §42, for some parallels. The date must remain uncertain for want of better comparative material.¹⁰ Note the three rivet holes, which indicate the purpose of the strip in question.—Pl. 64:6 is a broken ring (nose-ring?) of twisted copper wire. A smaller plain ring (Pl. 63:41) and a typical copper needle, complete with eye (Pl. 63:40), offer no special problems. The same may be said of a broken spike (Pl. 61:18) and a number of arrow-heads, examples of which are reproduced Pl. 61:19, 21 and Pl. 63:28.

48. Among the most characteristic objects in deposits of Iron II are the stone cosmetic palettes illustrated in plates 27, 30 and 57. These palettes range from simple, undecorated forms like Pl. 30:2 (= 57, a:4) and Pl. 64:16 to the elaborately profiled and incised specimens from the 1928 campaign, Pl. 30:3-5 (= 57, a:1-3). In all a dozen whole and broken examples were recorded. The type in question is now very well known from contemporary excavations, especially at Megiddo, where 32 are published in *Megiddo* I alone (Pl. 108-111). Two principal types of decoration appear both at Megiddo and at T. B. M.: simple geometric patterns in concentric zones on the rim; radiating patterns of tiny circles made with a lapidary's drill, also on the rim. The Megiddo evidence does not establish any relative chronology for the two types, but it does suggest that the first was older than the second, since it predominates in Stratum II, whereas the second type seems more common in Stratum I. On the other hand, the second type is relatively more frequent in III! Our evidence points to a somewhat higher age for S. N. 519 (Pl. 30:1) and 520 (Pl. 30:5), which were found in debris below the latest A foundations in SE 22A, and seem accordingly to date from the eighth century (cf. above, §32). As pointed out by the Megiddo excavators, the holes on the rim had in

¹⁰ Cf. similar patterns on the gold ornaments from Enkomi in Cyprus which have been published by Murray, *Excavations in Cyprus*, Pl. XI: 182, 183, etc.; Pl. XII: 461, 462, etc. The most striking resemblances appear in tombs 84 and 45, both from L. B. (fourteenth-thirteenth centuries), as proved by their pottery. It may be that our piece of copper inlay also comes from L. B., and was out of context at T. B. M.

some cases been inlaid with colored frit, generally blue (cobalt) or green (malachite or turquoise). In two of the twelve holes on the rim of S. N. 519 (Pl. 30:1) we found remains of green paste, which we then considered to be intended to hold different colored pastes for use in painting the face; cf. APB 122 f. In favor of this explanation is the fact that the paste was *soft*, not hard as it would have to be to make a serviceable inlay. The shallower holes seem to have held colored inlay, since we found a small dark blue disk still in place in one of the five holes on the rim of S. N. 1081 (Pl. 27, B:9). Traces of coloring matter suggested that the incised pattern on the rims of other palettes was worked out in color (blue predominating). In spite of the lack of direct corroboration, there can be little doubt that our palettes originated in Phoenicia, whence they were exported in quantity for the peasant trade. The close-grained hard limestone of which most of these palettes were made, does not seem to occur in southern Palestine, at all events. In favor of northern origin is also the fact that one example from Nineveh has been published by Campbell Thompson (AAA, 1931, Pl. XXII:4), which he describes as about 8.8 cm. in diameter and 2.5 cm. high, i. e., nearly identical in dimensions and form with our example Pl. 30:5, which also resembles it closely in pattern. Thompson's queried "felspar" is evidently wrong; he was presumably led to it by the granular character of the stone and its whiteness.

49. Little jewelry turned up in Stratum A, and what there was reflected the poverty, or better, the simplicity of life in a provincial Jewish town of the late Monarchy. Most abundant were bone pendants, probably suspended from the ears; cf. the examples reproduced Pl. 32:15-16 and Pl. 64:1-4, 8-11. These pendants range again from plain specimens through examples with simple incised bands or circles made with the lapidary's drill to the elaborately decorated pendant shown Pl. 32:15. At Megiddo (*Megiddo* I, Pl. 97) they range through Strata V-III, with one specimen each attributed to II and I; the Megiddo examples from V are as a rule rather different in shape. Since the examples from Gerar are assigned to levels 185-194 by Petrie (*Gerar*, Pl. XXXIII), they would seem to extend from the tenth to the eighth century inclusive, precisely as at Megiddo. With this dating the T. B. M. evidence does not conflict; all our pieces should date stratigraphically in the ninth-seventh centuries.—Beads and amulets were surprisingly few and plain in Stratum A; only a few have been reproduced: Pl. 29:13, a scarab of cobalt blue paste, from early in Stratum A (possibly even older); Pl. 60:11, a scaraboid of dark green stone; Pl. 63:34, the lower part of a Bes amulet in faience. The carnelian beads, Pl. 63:36-38, were indeed found in a locus of Stratum A, but in a kind of cave below it, with apparently Middle-Bronze context (supported by form and material of the beads).

50. A number of figurines and related objects in human and animal form were discovered, in addition to the fertility figurines described above, §41. The most interesting specimen is a torso, S. N. 1226 from S. E. 13A (Pl. 55: 12 = 29: 11) of clay, representing a male figure clad in a leather corselet, about as long as a man's coat today, and apparently in leather boots or leggings coming up to the knees. At the top of the torso is the lower part of a socket into which the head presumably fitted. The cistern in SE 33A-15 yielded a group of three pedestal objects, Pl. 32: 1-3 = 57, b: 2-4, all employing the same "snow-man" method of keeping the figures upright as used by the fertility figurines. No. 1 represents a women with her child on her back; the extraordinarily crude modeling proves local origin; for the technique cf. below, §143. No. 2 (included here for convenience) bears a miniature lamp of good Iron-II form on the pedestal; cf. below, §141; No. 3 represents a flying bird, presumably a dove or swallow. Whether these objects were intended as toys or as amulets must remain obscure for the present; I incline strongly to the former view. Pl. 32: 5 is a particularly wretched specimen of local modeling; it was presumably meant to be a man on horseback, like Pl. 32: 7, where the rider is even more sketchily done (see below, §51). Figurines of horseback riders were popular all over Palestine and Syria in the eighth and seventh centuries, though usually somewhat better executed. Examples are quite common in published reports: cf. the complete figurine from Beth-shemesh (eighth century B. C.) published in APEF II, Pl. LV (repository of eighth-seventh century Tomb 8).

51. A considerable number of animal figurines and a few animal vases turned up in this stratum, just as elsewhere in contemporaneous levels. S. N. 1554 (Pl. 58: 1 = 27, B: 1) is a particularly good example of the animal vase, representing an ass, or possibly a horse, with gaily decorated housing. For a detailed description of its technique see below, §139. Animal vases of even less identifiable character are illustrated in TBM I, Pl. 71: 1 and (with the feet broken off) below, Pl. 15: 14. Three small jugs with the neck and spout modeled to represent a crested hoopoe were also found: see TBM I, Pl. 71: 3 (S. N. 326); below, Pl. 29: 14 (S. N. 874); Pl. 27, B: 2 = Pl. 58: 2 (S. N. 1022). On the technique of these jugs see also below, §139. A number of broken dove figurines were also found, e. g., Pl. 58: 4 (S. N. 890) and 16 (S. N. 2071), one wing of which is completely preserved; on the doves cf. below, §141. The most common quadruped figurine was undoubtedly the horse, with or without rider (below, Pl. 58). In addition to the fragments of horse-and-rider figurines already noted in §50, attention may be called to Pl. 58: 3 and 5, as well as perhaps No. 7; the technique of the horse figurines is described below, §143. It is naturally impossible to tell in many cases whether the quadruped in question was intended to be horse, ass or bull. However, it is significant that not a

single figurine can be considered as clearly bovine, whereas the equine character of most specimens is unmistakable.

52. In this section we shall describe decorated objects of clay, bone and stone. The bone object, Pl. 29:15-15a = Pl. 60:12, may possibly be the handle of a fan; it is decorated with rows of punch-marks, and the wide groove which was carved out of the left end of the piece was presumably intended to hold a strip of dyed leather. — The curious hollow clay object, Pl. 32:4 (= Pl. 57, b:1), looks mildly theriomorphic with its eyes and snout, but the painted bands on its neck and the herring-bone-and-line design across the top remain unexplained. The pottery fragment, Pl. 32:6, looks even stranger at first glance, but we may perhaps identify it as part of the front end and neck of an animal toy; the narrow groove and two tiny holes may have been intended to keep a painted wooden head(?) in place. — Pl. 32:12 and 13 are carved and perforated truncate spheres (with flat base and top) of unidentified brownish stone; the diameter of the perforations is only about 7.5-10 mm., so they can scarcely have been used on anything larger than a spindle. They may perhaps be treated provisionally as spindle-whorls; the closest analogues I have been able to find are carved limestone objects of the same shape (though averaging about one-fourth larger in diameter) from Stratum V at Megiddo (*Megiddo* I, Pl. 95:30-31). These objects are also regarded as spindle-whorls by the excavators. As a rule perforated sherds were considered sufficient for the purpose in Iron II, so these objects were presumably employed on more elegant spindles. — Pl. 60:14 is a piece of bone inlay, as shown by its shape and the circular hole near the bottom. Its dark color, suggesting much use, and its shape may indicate that it comes from some object of leather.

53. A number of miscellaneous pieces of clay and bone may be included here, for convenience. Pl. 32:8 and 11 (= Pl. 57, b:5-6) are representative pottery rattles; on their technique see below, §142. — Pl. 32:9-10 are carved whistles of bone, which can still be used as effectively as when they were made. A number of other broken whistles of the same type were found. — Pl. 32:14 is obviously a clay thimble, as shown by the small pit at the top, for the purpose of keeping the needle from slipping.

54. Objects in stone were not as numerous perhaps as in earlier periods, but a good many were found. Stone mortars occurred quite frequently; the best were tripods. Two elaborately carved tripod mortars of coarse basalt (lava) turned up in Stratum A: S. N. 32 (Pl. 30:7 = 57, d:3) and 2102 (Pl. 29:16 = 63:32); the type is well known from Megiddo (M I, 122, Fig. 184, from the "temple" of Stratum IV [not V with Lamon and Shipton; cf. above, Chap. I, n. 10], i. e., probably from the time of Solomon or at the latest from the ninth century, if from IVA; *Megiddo* I, Pl. 112:13 [from Stratum V, or more

probably, since this piece comes from Locus 6, from IVB], 17 [from Stratum IV]). Since there is nothing to suggest an earlier date for S. N. 32 than the seventh century, the type seems to have survived for over two centuries after the date of the Megiddo specimens; it must be admitted that there is considerable difference in detail of ornamentation between the latter and our two examples, both of which exhibit deep fluting at the points where the bowl rests on the legs of the tripod. A much simpler type of tripod mortar is drawn Pl. 30:6 (= Pl. 64:12; cf. also 64:13). This type is familiar in contemporary levels.—The stone bowl Pl. 29:17 (S. N. 1593 from SE 22C-5) was omitted from TBM II by mistake; there can be no doubt of its L. B. date, both stratigraphically and typologically (cf. the closely related stone bowl TBM II, Pl. 31:6, also from C).—Many shapeless stone mortars, basins and vats were unearthed in the course of our work, as for example in SE 50A-3 (Pl. 44, c), but no particular purpose seems to be served by reproducing them. The same is true of the many saddle-querns for grinding grain which we excavated; the type is too well known to need further illustration, and its late variations are of little chronological significance.

55. Numerous other stone objects of every possible kind appeared in Stratum A; a selection of them may be described in this section. Whetstones were numerous, mostly perforated for suspension from the girdle: cf. Pl. 62:12-13 and Pl. 63:7 (from Stratum H), 22. The perforated piece Pl. 62:14, flat and of dark gray stone, seems to be some kind of amulet; the perforated stone Pl. 64:19 may possibly be a weight, strung together with other pieces when not in use. The curious piece Pl. 62:9, of coarse basalt (lava), has its four sides decorated alternately with rows of six horizontal and four vertical strokes; since it is only 7.4 cm. in height it is hard to see what it can have been used for. Playing pieces are represented by Pl. 62:15 (limestone) and 63:35 (faience); both are characteristic of Iron-Age types.—Pl. 63:1 is a marble whorl from Stratum C; 63:2-6 are stone whorls of different kinds (No. 3 is flanged on the flat side; No. 4 is a truncate sphere of much the same type as the carved examples described in §52, though a little larger; Nos. 5 and 6 are rings). No. 8 (S. N. 959) is a truncate spherical object with flat top and bottom but unperforated; it is probably a weight like S. N. 960 (Pl. 63:14) from the same locus and like the undoubted weight S. N. 864 (Pl. 63:15), which has the same form, though larger and better shaped. No. 9, which is 5 cm. high and 4.3 cm. in maximum diameter, may be a rubbing stone, though this term is not very satisfactory in many cases of this kind. Nos. 10-12 are scoria (pitted lava) rubbing stones of a well-known type, with perforated handles. Pl. 64:18 is a similar rubbing stone, but without handle. No. 13 seems to be a stone gouge; it has four slightly rounded sides and a sharp point.—Nos. 14-17 and

19 are weights, which have already been treated in §44. No. 18 (unrecorded) may also be a weight. No. 21 is a sphendonoid weight of typical M. B. form, intrusive in our context. The oval haematite piece, No. 20, may be either weight or rubbing stone. No. 23 and 24 (S. N. 276 and 194) are weights (the former may be a rubbing stone); cf. above, §44. Nos. 25 and 26 (S. N. 540 and 583) are flat stone disks, 1×2 and 0.8×1.7 cm. respectively; No. 25 has concavities at both ends of the axis. What they were is not clear—weights or playing pieces may be considered equally possible interpretations. No. 29 (S. N. 691) is a considerably larger stone disk, with an edge chipped, from Stratum C (since its original weight must have fallen between 11.0 and 11.5 gr. it may *perhaps* be a shekel weight). No. 30 (S. N. 698) is a conical limestone weight or rubbing stone; No. 31 (S. N. 537) is a stone whorl of truncate conical shape. For No. 34 see §49 and for No. 35 see above in this section. Nos. 36-38 are Middle-Bronze beads; see §49.

The stone objects in Pl. 64 have mostly been described: Nos. 14 and 17 are weights (§44); No. 15 is an alabaster knob with a small projection at the bottom, presumably for attachment, and may have been a dagger pommel (it was found fairly low in a locus of Stratum A, and may be older); for No. 16 see §48; for Nos. 18 and 19 see above in this section.—The stone objects portrayed in Pl. 65 are building elements—or at least imitate constructional elements. No. 1 (S. N. 1362 from SE 4A-3) is the lower part of a small polygonal column of soft limestone, with irregular rounded base attached to it (in one piece with it); nine facets are preserved, out of an original sixteen(?). Since the maximum width of the column is only 13.5 cm., it cannot have been used in constructing anything larger than a shrine of some kind (but for what purpose?). Polygonal columns were not unknown in Iron-Age Palestine and Syria; they were derived from similar columns in Egypt, where an original column with square section became successively modified into octagonal and sixteen-sided columns (cf. Clarke and Engelbach, *Ancient Egyptian Masonry*, pp. 136 f.). The latter first appeared in the Middle Empire and continued long thereafter. The rounded column-base is also characteristic of this style in Egypt, though it is lower and, of course, more regular in execution than our piece. To complete the analogy, our facets are separated by ridges, as in Egyptian polygonal columns.—It is hard to see what the oblong blocks of limestone pictured as Nos. 2 and 3 on Pl. 65 were used for. Both were of soft white limestone, with several sides worn smooth and several edges rounded by constant friction. On the unabraded side of No. 2 was lightly carved a geometric human figure, consisting of a rectangle with two intersecting diagonals to serve as the torso, with the sides prolonged downward for legs, with the top of the rectangle prolonged for arms and a circle added to serve as the head.

CHAPTER IV

THE POTTER'S TECHNIQUE AT TELL BEIT MIRSIM, PARTICULARLY IN STRATUM A

BY J. L. KELSO AND J. PALIN THORLEY¹

56. All archaeologists are interested in pottery, since it is one of the major tools of their profession. But there has hitherto been little collaboration between the archaeologist and the ceramic expert in the study of the ancient pottery which the former has excavated. Since this study is written primarily for archaeologists, the first section of the chapter is devoted to a general description of the more common techniques of pottery manufacture as determined by a study of the pottery from Tell Beit Mirsim (T. B. M.) with some references to data from other expeditions which have important related techniques not noted in our ware. This is not an exhaustive study of all techniques used in ancient Palestine, but is primarily devoted to T. B. M. ware from Stratum A. An exhaustive study would entail the *actual handling* of pottery from all excavated sites. The second section of the chapter presents a detailed technical study of various types of pottery from Stratum A at T. B. M.

This investigation is based upon the finds of the four T. B. M. expeditions, and in particular upon the pottery of those expeditions which is now in the Bible Lands Museum of the Pittsburgh-Xenia Theological Seminary. The primary reason why the study is restricted to this pottery is that the ceramic expert must study his pottery by actually handling it; and in this study all pottery has been handled by a ceramic expert. Good photographs and drawings are sufficient for studies in the general forms of pottery, but they are never sufficient to bring out more subtle aspects of the pottery. Only actual handling can justify a final judgment, for the true pottery critic sees as much with his fingers as he does with his eyes.²

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SECTION I

MANUFACTURING TECHNIQUES USED IN ANCIENT PALESTINIAN POTTERY
AS ILLUSTRATED BY WARE FROM TELL BEIT MIRSIM

57. Clay is an earthy substance which, when mixed with water, becomes plastic and is then capable of receiving and retaining delicate impressions. It is easily moulded into any desired shape, and on the application of heat such shapes or forms are rendered permanent. Chemically speaking, clay is a hydrated silicate of alumina mixed with various impurities. The clay base itself corresponds to the formula $\text{Al}_2\text{O}_3 \cdot 2 \text{SiO}_2 \cdot 2 \text{H}_2\text{O}$. Clay, however, is rarely chemically pure in nature. Indeed many commercial clays contain less than 50% of this essential ingredient; and the kaolins, although they are chemically the purest clays, must be modified before use for they are only slightly plastic.

Primary clays have been produced by varied chemical actions upon felspathic rocks and are to be found at their place of origin. Kaolin is the best known of such clays, and porcelain, which is the finest of all pottery, is made from it. Secondary clays are transported or sedimentary clays. They are usually water-borne and in their travels they have picked up various impurities, each of which in its own way modifies not only the finished ware, but also the various ways in which the clay must be tempered, fashioned, dried and fired.

58. The clays used exclusively in T. B. M. pottery and also in pottery from most other Palestinian sites were these secondary clays. They are generally more plastic than the primary clays, due to increased fineness of particles resulting from mechanical friction during transportation, the addition of decayed vegetable matter and contact with bog waters. Clay deposits or beds vary in character even in the same bed or seam, the variation being due to varying sedimentation. As the velocity of the clay-bearing stream is lowered, it affects the nature of its deposits.

1. Heavy stones settle first, forming a stony clay deposit.
2. Gravel settles next, forming gravel clays.
3. Coarse sand settles next, forming coarse sand clays.
4. Fine sand deposits next, forming clayey sand clays.
5. Fine plastic material settles last, forming fine good clays.

59. Secondary clays vary in color and properties according to the impurities present, and to the percentage of such impurities. The color of clays varies in the same pit and in the same seam:

1. Iron oxide gives shades from red to brown.
2. Iron hydrates give shades from yellow to cream.

3. Iron carbonate gives shades of grey.
4. Organic matter gives shades of black to brown.

The colors of the first three may be seen both before and after firing, but the last can be seen only previous to firing or burning as organic matter burns away during firing. The following are typical analyses of various secondary clays compared with primary clays:

Variety	SiO ₂	Al ₂ O ₃	CaO	Fe ₂ O ₃	NaK ₂ O	MgO	H ₂ O
Pure clay	46.51	39.53					13.96
China clay	45.00	40.15		0.35	0.81		13.70
Ball clay	49.99	32.11	0.43	2.34	3.31	0.22	11.70
Red clay	57.49	25.55	1.68	7.75	4.43	0.97	2.13
Fire clay	68.91	28.89	0.78	0.23			1.19
Brick clay	66.16	22.54	1.42	5.01	0.35	trace	4.52

The percentages of all the chemical components of a secondary clay are variable and the above formulae are simply typical and in no sense exclusive. Illustrative of this is the iron content found in red and yellow clays. The iron compounds in such clays may be in the following forms:

1. Ferric oxide, Fe₂O₃, red haematite. 5% to 15% present in red clays.
2. Ferric hydroxide, Fe₂(OH)₃. Yellow clays contain hydrated ferric oxide in a quantity not exceeding 4½%. They are derived from red clays which have taken up water and have been exposed to the atmosphere. The Fe₂O₃ becomes watered or diluted, and changes from haematite into limonite. Haematite gives red clays; limonite gives yellow clays.
3. Ferrous oxide, FeO.
4. Magnetite, Fe₃O₄.
5. Ferrous carbonate, FeCO₃, siderite.
6. Ferric sulphide, FeS₂, pyrites.
7. Ferrous sulphide, FeS, marcasite.

All these iron compounds modify the color of the clays in both unfired and fired or burned states. The ferrous compounds produce blacks, the ferric compounds reds and the ferric carbonates greys. All such impurities reduce the refractoriness of clays and, if in soluble forms, may form scums on the burned ware: i. e., a coating of soluble salts is deposited as a grey to white scum. The ferric compounds do not flux so strongly as the ferrous. Both ferric and ferrous will give grey to black in reducing atmosphere.

60. Alkalis and alkaline silicates such as felspar, mica, and soluble salts such as Ca, K, Na sulphates and chlorides act as powerful fluxes. Calcium compounds—calcium carbonate as calcite, chalk, limestone (whiting), shells, gypsum (calcium sulphate) and lime felspar (anorthite)—all give off carbon dioxide or sulphur gases when heated, and combine with iron, silica and alumina to form very powerful fluxes, especially when finely divided. On

heating, CO_2 is given off at temperature up to 900°C ., and this leaves the clay porous up to the fusion point. If firing ceases here, limy clay will take up moisture and lime particles will slake. If the particles of lime are finely enough divided little or no harm will result; if in large particles they will "blow" and fracture the surface of the ware. If burning continues above 900°C ., the CaO combines with the silica, alumina, iron etc. in the clay and softens it, i. e. makes it more fusible. This means that a narrow margin of safety is allowed, and that a high percentage of calcium compounds in a clay body tends to give deformation if slightly over-fired. A typical analysis of a marl clay runs:

SiO_2	43.7
Al_2O_3	15.5
CaO	16.3
MgO	2.1
Fe_2O_3	5.2
$(\text{NaK})_2\text{O}$	0.7
Carbon	1.6
	12.4 (other impurities)
	2.5 (loss in ignition)

61. Carbonaceous matter affects the color of unfired (unburned) clays but should not affect the color of fired goods. It is present as decomposed vegetable and animal matter, also as lignite, mineral graphite, etc. If the kiln is started with free access of air and burns slowly and thoroughly, "soaking the oven," the carbonaceous matter is burned out. If early heating is carried on too rapidly, the clay body commences to fuse before the organic matter is burned out. A film of fused silicious matter is formed around the organic matter so the air (oxygen) cannot make its way to the carbon, and black cores are formed.

62. Laboratory kiln tests made on the various types of pottery found at T. B. M. show that the vast majority of the ware tested was made of red clay, which is the commonest of all types of clay. By "red clay" is meant a clay which fires to a rich red at proper temperatures, although as it came from the earth its color may have been red or yellow, blue, green, grey, black, etc. The red color of the properly fired clay is due to iron compounds. If the clay runs from 4% to 15% ferric oxide, and if that clay has only such a small percentage of calcium and magnesium that these do not modify the color, and if the clay is properly fired at a temperature somewhere between 900°C . and 1050°C . then that clay should fire a beautiful rich red. But if there are any deviations from any of these three major conditions, they will most likely modify this rich red into some other color; and because of these numerous variations in color potters call iron a chameleon. This chameleon nature of

the iron in red clay can be seen in the following list of some of the accurate color values found in the pottery of the A level: buff, creamy buff, greyish buff, pinkish buff, pinkish to reddish buff, light reddish buff, reddish buff, reddish to greyish buff, brownish buff, brownish, light reddish brown, orange, orange to red, reddish, brick red, brick red to buff, dark grey.

63. How then were these various color changes produced? A few examples will illustrate something of the color complications produced by iron in pottery, although they by no means exhaust the complications. If iron oxide content is from 3% to 4%, the color will most likely be brown, but if less than 3% it may run from buff to poor white. 1% of iron will often show a good white. On the other hand, however, a brown, a buff or a white may be produced from a clay that runs a heavy iron content, for the iron is modified in color by the nature of the other impurities such as lime, magnesia, soda, potash, etc., which are present in the clay. For example, any calcium or magnesium in the clay in sufficient quantity will "bleach out" the red color and produce a yellow, grey, drab, or even a white. Alumina, which is a basic element in clay, also modifies the color value of the iron. If the clay is high in alumina and low in iron, the fired product is pink or white at low temperature. If the same clay is fired under reducing conditions at high temperature, it is bluish or greyish white; or cream to ivory if under oxidizing conditions. If the clay is high in alumina and medium in iron the fired product runs pale yellow to buff. If the clay is low in alumina and high in iron and lime the fired product will likely be cream or yellow. If the clay is low in alumina and high in iron the fired product is a good red. The best reds are usually produced by a 4% to 9% ferric oxide content. The red ochre that is used for slip and gives the finest color on Palestinian pottery usually contains about 17% ferric oxide.

64. Then, too, firing methods also modify the red color. The best reds are produced by slow firing with a strongly oxidizing atmosphere, i. e., with plenty of air (oxygen) reaching the pottery in the kiln, especially between 700° C. and 900° C. Some clays will mature at 900° C., and even 800° C. is enough for some impure clays. Many, however, require 1050° C. and still others will scarcely show any red color below 1050° C. But if any of these specimens are over-fired, their rich reds then turn to muddy browns. Additional over-firing on non-limy clays will again darken the color to a dull blue, purple, or black. Against this theoretical range of color changes due to firing conditions, kiln tests made on T. B. M. sherds, show that most of the ware had been fired below 970° C. At that temperature and at 1030° C., the other high-temperature test, the clays show good red colors except where they were modified by lime. Deep browns and chocolate colors are occasionally seen on T. B. M. pottery,

but these colors were probably not produced in the kiln. It is much more likely that they were produced by the heat of the burning houses when the city was destroyed by a conflagration. None of the pottery examined was of the highly over-fired class. At the other end of the temperature range, under firing a properly prepared clay will again modify a normal red and instead produce a buff, a grey, or a mottled color. Then, too, a reducing atmosphere, i. e., insufficient air in the kiln, will also modify the colors, giving browns, dark greys, and even blue-black. Indeed, a strong reducing atmosphere is often used to produce black pottery. Furthermore not all the vases in a single firing in an ancient kiln would be of the same color, for the air currents within the kiln not only modify oxidation, but give different temperatures in different parts of the kiln. Probably no kiln they used had less than 100° C. variation and many had much more.

65. In the T. B. M. specimens examined we must differentiate between black vessels in which the black color is due to the deposition of carbon or carbonaceous matter in the pores of the clay, and vessels where the grey to black coloration is due to reduced iron, i. e., where the ferric oxide Fe_2O_3 is reduced to ferrous oxide FeO , or magnetic oxide Fe_3O_4 , or complex combination of these lower oxides, FeO and Fe_3O_4 , which give black to grey. With excess of air (oxygen) over and above that required for complete combustion of fire gases, we have what the potter terms oxidizing atmosphere. Under such firing conditions the iron present in the clays remains as red oxide, ferric oxide Fe_2O_3 , giving the characteristic red color to clays. When the kiln is burned or fired in such a manner that excess air (oxygen) is limited or shut off completely by closing of air inlets and overcharging the fire-mouth with combustible materials, we have reducing conditions or reducing kiln atmosphere. The unconsumed carbon, carbon monoxide, present in the fire gases, will combine with the oxygen present in the ferric oxide Fe_2O_3 , reducing the ferric oxide to the ferrous state FeO , which gives a black to grey color to the fired ware. If this black or grey ware is again burned in a clear oxidizing kiln atmosphere the FeO is re-oxidized to Fe_2O_3 and the characteristic red color returns to the clay vessel.

66. In the pottery studied, most of the color changes traceable to the composition of the clay seem to have been due to native impurities in the clay rather than to the artificial blending of various clays. The one highly successful attempt to improve the color of the clay was made by the use of a rich, finely levigated red ochre slip placed upon a poorer clay body. This brief statement of some of the possible color complications in red clay pottery explains the wide range of color values found in Palestinian pottery and warns the archaeologist to be slow about jumping at conclusions concerning the cause of

Black
carbon
dioxide

the color of any particular jar. An accurate explanation as to the cause of the colors appearing in red clay ware may often need the assistance of a ceramic expert.

67. Certain of the T. B. M. specimens owe their black color to the fact that bitumen or oil was permitted to permeate through the walls of porous juglets, which were afterwards heated to a low temperature which carbonized the oily substance, giving a black which could be easily burnished to give a sheen to the surface of the piece and which at the same time made the ware impervious to thick liquids. In Egypt today the peasants, who cannot afford glazed pottery, rub a mixture of egg and oil or treacle into the pores of an ordinary red clay jar and then heat it in the fire until it turns a good black.

68. Other grey or blackish pieces owe their color to reduced iron, obtained by firing the kiln with excess of combustible gases, i. e., a smoky kiln interior. Wood smoke, which consists of finely divided particles of carbon, was permitted to enter the kiln, with a limited supply of air present. The carbon particles formed carbon monoxide CO and so created within the kiln a reducing atmosphere, and Fe_2O_3 red oxide became FeO ferrous oxide, giving black or grey. Finally the chemicals in the soil have been reacting upon this pottery through the centuries of its burial, and in some cases they have profoundly modified surface colors, even on the same jar.

69. After these introductory remarks upon red clay, one would naturally expect the complete description of a potter's workshop in ancient Palestine. Unfortunately, however, no such a complete plant has been found, although several sites have fragmentary remains. The published descriptions do not make any reference to the pits from which the clay was dug or to the settling basins used in the purification of the clay. Theoretically the potsherders themselves tell a large percentage of the story of the preparation of their clay, but only ceramic experts can decipher that story accurately, and they would need to be actual members of an expedition examining the sherds daily for several months before their conclusions should be called broad enough to be of true scientific value. Thus the discovery of the actual treatment of the pottery clay in ancient Palestine remains a problem for future research.

70. Although we cannot be dogmatic about the potters' methods of preparing clay, it is probable that they worked somewhat after the following fashion. As most red clays are surface clays, the top soil was removed and the clay was thus easily accessible. Larger pieces of extraneous foreign matter, such as vegetation and pebbles, were then removed. Most red clays are naturally plastic, but some of the more compact require weathering before they can be used. When weathering was necessary, the clay would be spread out in the

summer on a hillside facing the sun for its reactions on the clay. Later the winter rain would permeate and disintegrate the hard clay; and any frost would hasten the action. The changes in the weathered clay would be three-fold—mechanical disintegration especially due to temperature changes, which are great in Palestine, equal physical distribution of moisture, and chemical changes. Water would act as a solvent to remove many chemical impurities, especially if carbon dioxide was present. Alkalis and soluble sulfates would be thus removed. The clay was probably arranged for weathering in heaps or rows so that it could be turned over from time to time to insure equal exposure. The potter had to guard against too much winter weathering, however, as heavy rains might cause the finest clay particles to be washed away and lost.

71. Both the natural clay and the weathered clay were probably purified by washing and settling in a chain of vats dug on a sloping hillside. The upper vat was kept filled with clay and water. The water picked up the finer particles of the clay and overflowed into the next vat and so on down the slope. The lowest vat thus contained the finest levigated clay and the upper vats the refuse material and poorer clay. (In mediaeval times such pits were about five feet square and three feet deep.) For extra fine clay, the material in the lowest vat could be strained through a cloth, but judging from the jars studied most of the clays used at T. B. M. were not strained. Well cleaned Palestinian clays with fine texture, however, are found as early as the Chalcolithic Age. Well levigated clay could be further improved by souring it. This was done by adding vegetable or animal refuse to the clay and allowing it to stand in a cool, moist place such as a cave. The action of the decayed vegetation, the resulting tannic acids, and the other organic colloids in such clay greatly improved its plasticity.

72. Most of the pottery studied by us had been made by "throwing" on the wheel and it therefore demanded a good plastic clay that could take and retain the exact shape desired by the potter. It was equally important that it have the correct degree of porosity, which permits the ware to dry without cracking or warping. Finally it must have had the correct degree of vitrification, in order that when subjected to heat it would produce a hard stone-like substance retaining the original plastic shape without modification except for normal shrinkage. Natural red clays usually have a good plasticity, but if the clay is too rich and therefore too sticky, it has to be tempered, i. e., some of the following substances are added so that it can be thrown easily:—straw or other vegetable matter, quartz sand, feldspars or grog, i. e., broken pottery ground to suitable fineness. Neolithic Jericho pottery already shows use of straw, sand and small stones. These foreign substances not only counteract the excessive plasticity of the clay, but at the same time improve the porosity of the clay

tempering

Neolithic

and reduce its shrinkage, and therefore its cracking or warping tendencies during both drying and subsequent burning. The addition of quartz sand furthermore gives a better air circulation in clay so that it dries quickly and in firing the carbonaceous matter is more quickly burned and thus there is less tendency to bloating. If organic matter is added to a clay which vitrifies at a low temperature, the ware has to be very carefully watched during the firing, lest it fuse before the carbon is completely burnt and the ware then bloat from the trapped carbon gases. Ordinary straw does not improve the adhesive quality of clay as some archaeologists state. It actually lessens its strength but not enough for serious trouble. If the straw, however, has decayed, then as a result of this decomposition the clay is improved in plasticity and working quality. Too much silica reduces the mechanical strength of its ware.

Washing
73. If the clay chance to be too short or lean, i. e., not plastic enough for throwing, it is washed to remove excess sand or other substances. A lean clay, however, is better than a plastic clay for use in a press mould, although it must always have sufficient shrinkage to draw away from a lightly baked clay mould. If the native clay contains fluxes the clay can still be used, but it has to be watched carefully in the firing, as it matures at a lower temperature and, if overfired, the ware begins to fuse. One cannot over-emphasize the quality of the clay used. There is an old proverb that a good clay makes a good potter. The potters mixed this clay with water by treading it with their feet. This method is portrayed in Egyptian tomb paintings and is referred to in Is. 41:25. Treading is the best method for distributing water evenly throughout the mass and at the same time it is the best way of removing air bubbles from the clay. Even in our mechanical age, treading is still used for certain ceramic products where the finest possible preparation of the clay body is required. Hand wedging is the alternative method. Fine grained and plastic clays must be carefully watched to see that all air is removed in treading or wedging because air will make successful throwing difficult and will produce blisters in fired ware.

Treading
74. After a careful study of all the Iron-II pottery in the museum, it can be stated that the preparation of the clay represents the poorest phase of the potter's craft at T. B. M. Apparently, however, it was economic necessity that dictated this policy. Although there are a number of pieces showing correctly worked clay, the vast majority of the native potters used a limestone temper which was a poor substitute for sand, flint or quartz and also prevented high firing, which would have greatly improved much of the ware. There is a striking difference in many instances between ware made with properly and improperly prepared clay. In a few cases the temper used was a crushed quartzite stone, but its exact composition has not been determined. The Iron-II potter seems to have used a highly plastic clay that needed a good sand or flint

temper; but apparently none was near at hand so the potter substituted a tempering agent which was at hand, namely limestone. He knew, however, the shortcomings of this substitute and therefore fired it at a much lower temperature than the ware prepared from the best clay. The temper was apparently crushed rock and was rarely sifted into grains of equal size. It often runs from the size of fine sand to small pebbles in ware of the cheaper grades. The potters who threw heavily tempered ware such as cooking pots must have had hands as tough as leather to stand the sharp edges of this grit. This limestone-tempered clay required most careful kiln-firing, which it actually received, as will be explained later. It did not, however, bleach out the red color of the clay since this lime was mechanically added, and was not a component part of the clay itself as in a marl clay.

In some instances the clay seems to have been a true marl, with the lime well distributed in tiny specks. In this case the tiny lime particles had been so diffused through the clay body by nature that they made little trouble in this low-fired ware.

Middle Bronze Age pottery showed the best prepared clays of all wares studied. Some of it approximated the highest Greek standards.

75. After the preparation of the clay comes the shaping of the vessels, and the method by which this was done can in most instances be told by a study of the fired ware. The firing produces such physical and chemical changes in the clay that it renders the original forms and impressions permanent, and thus preserves most of the evidence of manufacture.

76. The earliest pottery found in Palestine was at neolithic Jericho, where it was immediately preceded by unfired clay ware. The first true pottery was hand-fashioned out of pieces of clay or sheets and coils of clay, or else it was moulded over some object such as a basket or a piece of broken jar. Such pottery could then be trued up by placing it on a mat and correcting the shape of the jar as the mat was turned round and round. These methods are still employed among primitive peoples. The slow potter's wheel consists merely in the substitution of a board pivoted at the center for the mat. The board need not even be circular. It speeds up production and gives a more symmetrical shape. After the invention of the true potter's wheel this slow wheel was discarded. Theoretically it could have been used by the painter who decorated wares in circles or spirals, but doubtless this was done on the true potter's wheel, when the thrower and turner were not using it. In Crete in the Middle Minoan period, when the slow wheel was used, it was stopped before the vase was cut off with the string.³ With the true potter's wheel the vase is cut off while the wheel is spinning.

³ Pendlebury, *The Archaeology of Crete*, pp. 104, 137.

MR pottery but clay

77. An entirely new principle in ancient ceramics, namely centrifugal force, is the secret of the true potter's wheel. A ball of good plastic clay is placed at the center of the wheel, which is then turned rapidly either by an apprentice or by the potter himself. The action of the centrifugal force upon the ball of clay, as it is modified by the fashioning hand of the potter, produces the shape. This gives to thrown pottery a liveliness and spontaneity of form that no other method can even approach. Normally the shaping was done by the potter's hands, but he could afterwards use a tool to give his work something of a mechanical evenness. This tool or rib was likely made of bone or metal or a sherd. Some of the sherds used for this purpose have been found in a potter's workshop located in a cave at Lachish.

78. Although paintings from Egypt and Greece show us a single wheel turned by hand, the Old Testament always speaks of the wheel in the dual. The dual in the Hebrew word *obnayim* may refer to a double hand-turned wheel consisting of two disks, the heavier one (which gave momentum) below and the lighter one above. The improved type of wheel where a foot power-wheel turns the small thrower's wheel seems almost certainly to have been of Greek origin. Ecclus. 38:29-30 is the earliest description of such a wheel, about 200 B. C. The ancient potter's wheel normally ran counter-clockwise as does the present-day wheel.

79. The true potter's wheel was not only in use but was used masterfully in southern Palestine as early as the 19th century B. C. and only rarely thereafter was hand-made ware produced until recent Arab times. From a commercial view-point, the invention of this wheel must have created a revolution in the pottery industry not only by speeding up production enormously, but also by improving the artistic qualities of the ware far beyond anything possible in hand-fashioning. In a few centuries the Canaanites developed these possibilities almost to Greek perfection.

80. To this new thrower's art was quickly added that of the turner. Under the new technique, after a thrown piece had dried to a leather-hard consistency, it was then replaced on the wheel and, with a cutting tool, some of the clay of the thrown vessel was removed. Thus still more delicate and refined forms were given to clay vessels than were possible by throwing only. The wet clay of a thrown vessel is quick to answer the call of gravity and therefore it could never be given any shape except one that it would retain throughout the drying period without warping or falling. But when a thrown clay vessel becomes leather-hard, it can then, if carefully handled, be turned into more delicate shapes and thinnesses just as wood and steel are shaped upon a lathe. The new and delicate clay forms (if not exaggerated) will retain their shape through the firing. This turned pottery reached its perfection in the Middle

Bronze Age, stratum E at T. B. M. Even turned Greek pottery in its finest periods made little improvement upon these fundamentals of Palestinian turning technique. The authors have not noticed any reference to turner's tools having been found in Palestine, although they have been found in Greece.⁵

81. Before leaving the potter's wheel, it is necessary to mention the pecuniary end of the potter's craft, for it heavily influenced the use of that wheel. Palestinian pottery was utilitarian; it was made to be used. Because of its constant usage and its fragile nature, its volume ran into something of "quantity production." To meet this problem potters increasingly found new short-cut production techniques in both throwing and turning by utilization of the wheel's possibilities. One very interesting technique which cut several industrial corners, was used in the manufacture of large bowls. When this was done as a pure throwing job, only an expert could do it so the bowl would hold its correct shape through drying and firing, and he had to use a more refined clay. Commercially, however, this problem was solved by employing less skillful throwers using a cheaper clay and throwing a thicker bowl with a heavy wide foot. Then, when this bowl was leather-hard, it was turned down to the desired shape and thinness, after which it would fire correctly. Other large shapes such as pitchers and crocks were often made by this same short cut. Besides the advantages of cheaper clay and lower wages, this method also speeded up production considerably.

82. Another speed technique that reduced costs is often seen in the making of small "pinched-off" juglets. Ordinary wares were made by taking separate pieces of clay and shaping each one of these individually upon the wheel. With the pinched-off technique, however, a great mass of clay was placed on the wheel and shaped into a tall cone. In mediaeval times, a mass of thirty to forty pounds of clay might thus be worked at a single time. On the tip of this cone a juglet was shaped and then pinched off the cone with the fingers as the wheel turned. This process was continued until the entire cone of clay was worked off. So much time was saved by this technique that it almost doubled production of this type of ware. Although most common for small ointment and oil jars, it was also used on an amphora type about twenty centimeters high. This technique can be seen by flashing a light into the interior of a juglet and noting the bottom. The pressure of the fingers in pinching off the juglet forced the clay up slightly into the floor of the juglet. Sometimes this shows the twist given the clay by the turning wheel as the juglet was pinched off. At times the strain was so great that the twisted clay split open a little way. Such a strain could only be produced from the bottom. If the strain

⁵ See Richter, *The Craft of Athenian Pottery*, p. 85.

had been applied on top of the juglet the center of the jar would have shown the twist. The "button" produced by the pinching fingers on the exterior of the bottom was usually more or less smoothed away by the potter afterward. Only in the amphora type was it preserved purposely as a part of the vessel's design. The Beni Hasan tomb-painting of the potter shows this cone method of shaping pottery, but the tool in the potter's hand implies that he cut off the finished piece rather than pinched it off. There is considerable evidence that this same "cut-off" technique was used in Palestine during the Iron-II period for small lamps and small oil decanters. The way they are cut off implies the use of a tool in some cases and a wire in others; but the work lacks, in either instance, the true angle that can easily be secured on individual pieces when cutting them off against the wheel. It is hard, however, to estimate an accurate level when cutting off a piece made from the top of a high cone of clay on a speed job. Furthermore some of these pieces show the tool mark to be higher at the center than at the exterior. This is easy to do when using a cone of clay, but not with individual throwing.

83. In passing judgment upon the work of the thrower and turner, it is well to remember that we are evaluating this pottery not as works of art, but as utilitarian objects. It is true that some of the pottery studied can be classified as art objects, but in this particular study, we are not judging them by the canons of art but by the canons of craftsmanship. Most of the pottery is functionally good. It is well shaped for the use to which it is put. This is demonstrated by the long periods of time in which various shapes remained virtually unchanged, plus the fact that very few shapes are found which do not automatically fit into certain well-known families of pottery. Illustrative of their treatment of functional problems is the spout, which came in with the Esdraelon culture, but was little used either in pipe or beaker form after the Early Bronze Age. Even the pinched lip which succeeded it was a big functional improvement on the spout, but its use was not very common. A well designed plain lip was the best all around solution for the pouring problem and was therefore normally used on all but a very few types. The steam holes in Middle Bronze cooking pots were another functional solution that did not survive. In general the simplest correct solution of functional design was the one which they employed. A rare example of this was the flanged rim, for special covers were seldom fashioned for specific jars.

An ideal solution of a dual purpose piece is seen in the Iron-I (B) bowls S. N. 505, 1314, which we may compare with the Chinese or Korean tea-bowl shape, the *temmoku*. This is a most useful shape, since it can serve as a cup fitting the palm of the hand, or as a bowl to be placed upon the table. In present-day China, where a relative of the same bowl is still made by hand,

a potter and his assistant (the latter to bring the clay and take away the finished bowls) will throw about three such bowls in five minutes, working until a board full of them is finished. Then it is removed to dry and the potters rest a few minutes before beginning a new boardful.

84. Most of the pottery was, functionally speaking, true clay ware and only a few types were imitations of metallic forms. Even here, the shapes were usually modified from the sharp angles of the metals to the curves of the spinning clay, as in various carinated bowls. Usually the vessels show a proper thickness for the utilitarian purpose to which the vessel was put. Crocks, store-jars and cooking pots (especially in the Bronze Age) are thicker. The finest table ware and perfume juglets are thin. Cheaper grades of all wares have a tendency to be overweight. The ability to keep the same shapes in approximately the same weights is true craftsmanship and was surprisingly well acquired by these ancient potters. Only occasionally does one pick up a well shaped jar which weighs more or less than the eye estimates its ideal weight to be. Most overweight is the turner's fault. He did not remove enough clay from the lower side-walls and the bottom (or foot) to make the walls and base of proportional thickness. Such a mistake also complicated the problem of proper drying, for the thicker lower walls and heavy base gave the jar irregular shrinkage, and upon firing at anything but a low temperature the foot would crack. The plates in TBM I illustrate the good and bad points of craftsmanship. Pl. 58:1 is such a jar improperly turned. He should have finished it like No. 3. The fault of the extra thin shoulder and neck in No. 1 was the thrower's. No. 3 shows good heavy shoulders that withstand the pull of the handles when the clay is drying. The worst examples of the heavy foot were the Iron-II lamps. Contrast them with the excellent Late Bronze lamps. Cf. Pl. 70:5, with Pl. 48:7. Pl. 54, a:5/below shows what would have happened if an Iron-II lamp had been fired at as high a temperature as some of the better bowls of the same period. Thus the better ware, unless it is to stand heat like a cooking jar, or the shock of a heavy load like a storage jar, has a fairly thin bottom. Furthermore, even the best cooking pots and storage jars keep their bottoms at the approximate thickness of the side-walls.

85. For table-ware the use of the ring-base is an ideal solution as it allows the clay to dry evenly and at the same time gives a thin bottom protected by the ring base which absorbs shock. Returning to TBM I, Pl. 65:24 has good sides, but a bad bottom. No. 20b is excellent. The trumpet-foot is an exaggeration of the ring-base. The foot of the Iron-I chalice is not a true foot; it is really the lower half of a vessel made in two sections. The disc-base is a cheap type of the ring-base, i. e., an incomplete job. The concave bottom

found on some of the small delicate bowls is a different type of solution for a base, but functionally it works excellently. Any type of convex base is rare. The unturned flat foot, especially on the bowl, is the poorest workmanship and is normally only found on cheap ware. Sometimes it even shows the marks of the string which cut it off the wheel. An Iron-II jar at the Louisville Presbyterian Seminary has a still different type of base. It is a ring of clay which was applied to the rounded bottom of the jar. Pl. 54, a:4 below shows this type of foot. The crack in the bottom of the jar but not in its base proves the latter to be an added piece and not a normal ring-base.

86. It is a general rule that there should be a relatively even thickness for the cross-section of a jar and that this thickness should be proportionate to the size of the jar. Again in TBM I, Pl. 66:14 is good throwing, but No. 15 violates both canons. Pl. 66:23 is good throwing for cheap ware. No. 22 is very poor work. Pl. 56:5 is poor throwing, for the wall of the jar should be slightly thicker at the shoulder to absorb the pull of the handles in drying, but here the wall is extra thin. The most difficult point in keeping the thickness even is in blending the walls into the shoulder and the shoulders into the neck. Thin edges on the rim of a vessel and sharp overhangs are another test of skillful throwing with ideal working clay. Ordinarily the rim is pressed down, rolled, thickened or profiled in such a way as to allow the rim to dry without cracking. If the potter found himself with too little clay to keep the thickness of his ware, he might thin out the neck in order to complete the shape he is throwing, for wares had a tendency to run in standardized sizes. In TBM IA, an excellent neck treatment with proper shoulders and mouth is Pl. 4:13 (G). The roll on the mouth adds strength. For a correct shallow bowl, one can enjoy the lines of Pl. 12:16 (D). For a tall one Pl. 14:2 (D) is good throwing but the turning work at the base did not cut deeply enough.

Finally in summarizing the thrower's art as represented by these museum specimens, it can be frankly stated that for commercial ware the craftsmanship and the forms are better than for similarly employed wares of today. Furthermore, in a surprising number of instances there was excellent throwing skill. On the whole, we do not produce any better shapes today. The best workmen were already close to "Greek" perfection and their work actually had more life and vitality to it than much of the more mathematically perfect Greek shapes. Indeed, these Israelite potters, if they had been employed in Greek pottery establishments at the period of the latter's best skill, could have quickly adjusted themselves to Greek refinements and their work would have been quite equal to that of the Greeks. Thus the old view that the Israelites had no artistic skill must certainly be revised in the field of ceramics.

87. In evaluating the turner's art, one must keep in mind that this is commercial pottery and that the lower half of each piece, which does not show, was not usually finished with much care. The Greeks themselves did not normally do their best work except where it showed, although the lower half of their ware was certainly finished better than that of the Israelites. At this point, however, it might be well to note that in another period of Palestinian history, namely the Canaanite Middle Bronze, the turner's art approximated that of the Greek at its best period. The true skill of the Israelite turner, however, can be judged by other details than fine finish. On ring-burnished bowls, the turner's work on the lower half of the bowl is so skillfully blended into the thrower's line of the upper half, that often their junction cannot be told from a side view, but the bowl must be turned over and the thrower's mark searched for. When one looks at the best pitchers from a distance, one cannot tell the junction line where the thrower's work meets the turner's surface.

The softer rather than the harder stages of leather-hard clay are best for rapid turning. But if the clay is too soft, then dragging or chatter marks show up in turning. These marks, however, may also be caused by a vibrating wheel or by coarse particles in the clay. The Israelite turner's faults are practically all those of fast production. Too much or too little clay was removed because the turner simply estimated by a glance the relative thickness of wall and bottom and did not take the trouble to check any measurements. In evaluating his work, one should say that it is *hastily* done rather than *poorly* done. Indeed, several types of flaws are those that only an expert turner could make. One such appears on a medium-sized bowl, which was turned without being wedged into place on the wheel. Much more skill is required for quick turning than for slow workmanship. The Chinese potter can turn three or four small bowls in a minute. This final tribute must be paid to the Israelite turner. There are only a few jars in the museum that rock on their base—and that is real turning. In comparison with the thrower, however, the turner is an inferior workman.

88. Only a few of the jars studied belong in the multiple-piece group. In this type of ware the vessel is originally made in two or more pieces and these are joined together with a little slip when leather-hard, just as handles are applied. Thus in Late Bronze and Iron I, the lentoid flask was thrown as two bowls and when leather-hard these were placed rim to rim, and mouth and handles were then added. Iron-I chalices were made of two pieces, a bowl placed upon a tall inverted vase. The latter had originally been thrown right-side-up and then turned upside-down to serve as the pillar support for the bowl. In the making of the largest jars, one method is to throw them in two

pieces and to join them with slip when leather-hard at point of greatest width in each unit. Some examples of this technique are described in detail in §138. No complete large storage jars of stratum H were in the museum, but from a study of fragments, it appears that a still different method had been used. The body of the jar was made by hand, using a fragment of an older jar as the mould. The neck, however, was made upon the wheel and the point of its juncture with the hand-made body was sealed with a small tool as is sometimes used in sealing joints today. In some two-piece *bilbil* specimens a roll-moulding was used to seal the joint where the neck-piece was inserted in the bowl unit.

89. From Late Bronze come two unusual techniques. Some *bilbil* necks were moulded around a wooden stick which was then withdrawn. The neck was then fitted to the bowl. Some elongated juglets do not have turned bottoms, but whittled bottoms with long and prominent knife-strokes.

90. The ring-base for holding pointed or round-bottomed jars should perhaps be mentioned here. It was thrown as a cylinder without a bottom and when leather-hard, the lower edge was turned. Sometimes it was thrown as a clay ring with a spreading bottom so as to hold vessels of different sizes, depending on whether it was used right-side-up or upside-down.

91. Differing from hand-made and wheel-made pottery are two other types: press-mould and casting. In the press-mould technique a clay or bronze mould is made and then into this mould a lean clay is pressed by the fingers or palm of the hand. As it dries, the figurine or other press-mould piece shrinks away from its mould and is then ready for complete drying and firing. A bronze mould is wetted or oiled before the clay is applied and then the finished pressed piece can be removed at once. Details of press-mould work are best represented in the Canaanite "Astartes" of the Middle and Late Bronze Ages, which are simple plaques of the goddess in low relief. In the few pieces available for study, one notes that the "Astartes" were sometimes removed from the moulds too soon and were then placed face downward, thus deforming certain parts of the body. Some unexpected attention to fine detail is given in the portraying of the ears and knees as well as the Egyptian head-dress. Jewelry is also represented upon the body. A fragment of one "Astarte" is quite interesting because the eyes are so deep that they must have served as sockets into which tiny bits of stone or shell were placed to represent the eyes themselves. There is also a deep hole in the one shoulder that shows in this fragment. Doubtless the arm was applied as a separate piece and fitted into this socket. These plaque "Astartes" are baked harder than most of the pillar type of Iron II.

92. The Iron-II Astarte figurine was a compound job. Here the head, finished off with a peg instead of a neck, was press-moulded for one unit. When leather-hard, the peg was then inserted into the neck of a leather-hard hand-fashioned body and the clay of the neck then smoothed out at the neck junction. For details see below, § 140.

93. To make a cast piece, water is added to a clay that is neither too plastic nor too lean until the clay is about the consistency of thick cream. The slip is then poured into a two-piece mould until the mould is full. The mould then absorbs the water out of the slip and deposits a uniform thickness of clay upon the surface of the mould. When this thickness is sufficient for the ware desired, the surplus slip is then poured out of the mould. After the cast piece has then dried sufficiently the two pieces of the mould are separated and the cast piece set aside for final drying. If an alkali is added to the slip much less water is required, but it is doubtful whether the ancient Palestinians knew this. Only one jar and one bull's head in the museum were cast. Both belong in the Iron Age. The rare use of casting was doubtless due to the fact that red clay is not a good casting clay. Indeed, it is quite difficult to use it thus. It is usually fine-grained and holds water tenaciously. The film, which is first deposited on a mould, is often so dense that it acts somewhat like a seal and further depositing is very slow. Then, too, it has poor pouring quality and after the excess slip has been poured out of the mould, the clay form left within the mould may not drain clean but may settle back irregularly against the mould leaving a rough wavy finish instead of a smooth surface. This action is very plain on the bull's head.

94. Handles came early in the history of pottery; the neolithic pottery at Jericho already shows lug, loop and knob types; and modifications of these shapes remained as major handle types. After the invention of the potter's wheel, the loop-handle became the most common type. It was made by pulling the clay into shape from a ball of clay held in the hands. If a ribbed handle was desired, the fingers were held in such a position that they produced this effect. The handle was applied with the aid of slip to the leather-hard piece at the lip or other point, after which the lower part of the handle was adjusted in place. This latter work does not always show the same care as the upper joining. One of the finest functionally designed loop-handles is that used on Middle Bronze pithos ware of Stratum E. Here there is hardly any inward curvature at the juncture point and there is a neat thickening and prolongation of the lower end of the handle. The loop-handle is normally placed perpendicularly and only occasionally placed horizontally. In the latter case it seems to be decorative rather than utilitarian. Its tilted angles add evidence for this view. The loop-handle was primarily utilitarian and its decorative

possibilities were not usually strongly developed. In the Middle Bronze period, however, the decorative handle went through numerous experiments. In double or triple strands it was pressed together, twisted or braided and occasionally its lower juncture point set off with pellets. Cheaper ware used a simple handle cut to imitate the fancier ones. The serpent, symbol of a deity, was used to decorate handles of ceremonial ware. Occasionally a human head, as at Bethel, or animal heads, as at Gezer, decorated a handle. One of the oddest types of handle is that of a small perfume juglet in Late Bronze base-ring ware where the string used to seal the jar's contents is imitated in clay with a pleasing effect. Another odd type of loop-handle, and one which is rarely used, is the imitation of the handle of a bucket. It is only used, however, upon narrow mouthed jars.

95. The lug-handle, although common in early days, decreased in popularity except in ware that was hung up by cords. The small lug, however, did continue to some extent as decoration. The knob type was most popular in the various forms of the ledge-handle in Early Bronze. It too was also modified and used as pure decoration. One of the oddest developments of the knob handle was the wishbone-handle of the Cypro-Phoenician milk-bowl.

96. There is only one place where the work of the potter's apprentice is startlingly visible and that is in the application of handles at certain periods. Especially in Iron II many handles on cheaper ware were made by apprentices and the work was often clumsily executed. The handles of the expensive ware of the same period, however, were well executed and the expert workman who threw and turned the bowl probably finished his own bowl or jar by putting on the handles. Incidentally it is well to note that handle-making is a difficult art, and seldom did work on handles reach the skill shown in throwing.

97. The ancient Palestine potter, whether Canaanite or Israelite, did not use glaze. The most common decoration was a slip. The finest wares were often treated with a slip and the same treatment was occasionally imitated in cheaper ware. Ordinary slips were simply the finer portions of the same clay used for throwing. The best slips observed, however, were made of the finest levigated clay of a rich iron content which had been thinned out with water to the consistency of thick cream. To this was sometimes added red ochre which stepped up still higher the percentage of iron. At T. B. M. no white clay slip was found on native ware. The ware was either dipped into the slip or the slip was applied to the jar by pouring or by the use of a brush or a rag. Thus a thin coat of slip adhered to the ware and if the clay slip had the same coefficient of expansion as the clay of the jar itself (as it should), then the ware looks superficially as if the jar itself had been made entirely of the same clay as the slip. It is the same scheme that we use in silver plating in metal-

lurgy, or veneering in woodworking. To secure greater thickness of slip, the vessel was given additional applications, all of which had to be given at the leather-hard stage. In certain wares and in certain periods only part of the vessel was coated with slip. Since the slip ware often contained a high iron content, it was best fired higher than ordinary ware in order to bring out the rich red color. If the slip cracked or chipped off, it follows that the body and the slip had been made of clays of unequal shrinkage, or the slip had been incorrectly applied, as when the ware was too dry or where too much slip had been applied. These were faults of poor craftsmanship. The present poor condition of a slip, however, may in many instances be due to mechanical and chemical influences upon it in the soil with which it has been in contact through the centuries.

98. In the history of pottery, it is rather surprising to note that red burnished slip was actually one of the first decorations to appear on pottery and is already found in the neolithic strata at Jericho. In chalcolithic Jericho, slip was already employed in other colors besides red, such as white, pink, brown and yellow green. This showed that craftsmen had already discovered many of the variations possible in native clays. The aesthetic effect of the slip can be still further augmented by burnishing. This is done by sealing the surface pores of the leather-hard clay by pressing them in with a pebble, or a tool of metal or bone. This effect is secured either by holding the bowl in the hand as in Iron I or by pressing the burnishing tool against the vessel as it spins upon the wheel as was done in Iron II. A very slow wheel is best for burnishing, and the tool should ride easily over a rather soft stage of leather-hard clay. The best burnishing is done while the wheel is being turned the direction opposite to that used for throwing and turning. In turning and polishing, the surface clay is removed from the ware, but in burnishing the surface clay is pressed gently into the ware. The smoothness of the burnished surface is the same as the smoothness of the burnishing tool. Burnishing gives a sheen to the clay, and the light reacts to this burnishing according to the angles and curves of the burnishing and the depth or shallowness of its channels. The finest results observed in the museum are in the trumpet-foot carinated bowls of Stratum E, where varied burnishing techniques produce a complex play of light and shadow. Burnished ware cannot be fired too high or its sheen is lost. The best burnished sherd tested, lost its sheen at 970° C. In the case of some vessels made with fine clay of a heavy iron content, the jar was burnished directly upon the clay body itself and no slip was used.

99. Among the common burnishing types done by hand are the following: continuous burnishing (short strokes close together and going in all directions), irregular, crisscross, "ring" (lines concentric with the rim), vertical,

chordal (the center of each stroke being at right angles to the radius of the bowl) and pattern designs of various types. Wheel-burnishing produces horizontal or spiral burnishing. Thorough burnishing on a finely levigated clay or slip not only adds beauty to the pottery, but it also closes the surface pores of the wares and thus reduces the porosity of the ware. It does not, however, make the ware completely water-tight. This slight leakage of a jar does not seriously affect its use for such liquids as oil, milk, or wine, because the solids in these substances soon fill up the tiny pores of the jar. Nor does porosity cause any serious obstacle to the storage of grain or other dry materials. Not even the best ancient Palestinian wares were completely water-proof, for glazes were not used in Canaanite or Israelite potteries. A few pieces look as if they had been hand smoothed after becoming bone dry rather than being left plain or burnished.

100. While speaking of slip, it is well to compare and contrast it with a wash. Both slip and wash are basically liquid clay at about the consistency of cream, but a wash usually contains a considerable admixture of lime, ochre or some other pigment. *A wash, however, is never fired; a slip is always fired.* The wash is a cheap substitute for a slip and is applied to a plain jar after it has been fired. Since a wash is not fired, a wash is easily destroyed by handling or by moisture. In ancient Palestine, however, it was the cheapest kind of an all-over surface and was usually applied to the whole jar or large sections. Sometimes painted designs were worked over it. Unfortunately some archaeologists use "wash" as a synonym for "thin slip," but this is not the practice of the Palestine Archaeological Museum, nor of classical archaeologists generally.⁶

101. A less common type of decoration than slip is incised lines in various combinations. In addition to line decoration they give special effect to the play of light and shadow which is very important in ceramics. They first appeared on chalcolithic ware. Lines run straight or wavy, singly or in various combinations, encircling the jars or related to some special feature of it, especially on the shoulder or neck. Short lines in pattern such as herring-bone or rope are used in simple, oblique, vertical, horizontal or wavy rows. Similar designs may be made upon a clay moulding rather than upon the body of the jar proper. The shortest line is really a notch and combinations of it are used especially in parallel rows. The way the light strikes these notches is worth noting. Closely related to the incised notch is the punch technique made by the point of a knife or other sharp tool, which produces either dots

⁶ Contrast, e. g., the practice in the Megiddo publications since 1930, e. g., Engberg and Shipton, *Notes on the Chalcolithic and Early Bronze Age Pottery of Megiddo*, 1934, *passim*.

or hollows. Rarely is the finger-nail used, but pie-crust design made by the fingers is common in Middle-Bronze cooking pots. The most interesting cut work is seen on the fragment of an Iron I fertility figurine imported from Cyprus (below, Pl. 32:17). The lines of the hands and wrists are excellent, as they show the pressure of the fluttering dove held against the breasts of the goddess. The fingers of the goddess and the wings of the dove are done by sharp cut-work, and other deep cuttings are used in the decoration. The knife work is sure, accurate, and deep. Combed ware is a form of incised ware in which a non-flexible or a flexible comb is drawn across leather-hard clay. The former ware is the more common. A non-flexible comb produces a permanent equally spaced set of lines. This may be fine or coarse, wheel-made or free-hand, of plain or patterned design. The rarer flexible comb (e. g., of horn cut quite thin) produces a fluctuating series of lines which change position and width under the changing pressure of the potter's hand, as in cups from Stratum H.

102. The first recorded painting in ceramics is a modification of slip decoration in neolithic Jericho ware; the slip was painted and then the paint burnished. Plain painting without burnishing followed, using simple geometric designs. By the Chalcolithic Period, they were adding trees, animals and birds; the human figure was rarely used. Painting was normally applied to the exterior of pottery or to the rims of bowls. It was rarely used for the interior of bowls or for handles. The colors noted in the painting of T. B. M. pottery are reds—light to dark, and both lustrous and mat, also reddish brown varieties. Grey, blue, purple, yellow and orange are rare. White and black are common and the latter is both lustrous and mat. The majority of these colors were likely siennas, umbers, ochres and other native earths. Indeed any of these colors except white may be produced by various red or yellow clays or mixtures of both under varied types of firing. They were applied with or without the admixture of clay and were applied to various degrees of thickness. The use of clay is especially illustrated by the opaque nature of some of the light colors which cover up even a black. The original colors were modified when the ware was fired, and the modified color would depend upon the temperature to which the fired ware had been subjected. When the ware was painted after firing, as was the case in the majority of sherds examined, organic colors could be used.

103. Ceramic painting presents three major problems. Whether the clay is white hard (ready for the kiln) or whether it has been fired, its surface is very absorbent and thus demands a different type of brush work from any other kind of painting. Second, if clay ware is to be fired after painting, only inorganic pigments can be used, for organic pigments will burn away. Third,

if clay ware is to be fired after painting, the original colors painted on the ware change, thus forcing the artist to work out his composition with his finished colors in mind rather than with the actual colors he places on the clay surface. Glazes would still further complicate the problem, but the ancient Palestinian potters did not use them.

104. Because of the absorbency of the clay surface and since no correction can be made upon it, there is a special technique in using the brush and only a good brush whose hairs spring back easily can be successfully used. The lines painted must be spontaneous, swift and complete, otherwise the clay absorbs unequal amounts of paint at different points and the accuracy of the line is ruined. The brush can never be lifted for a split second when working upon clay. Neither can a line be retouched, for the point of correction will show a blot. Thus the painter must have every detail of his composition definitely fixed in mind before he puts his brush to the clay. Also since much pottery has a circular surface, the design must be so well conceived and executed that the point of juncture is not noticeable. Thus pottery painting demanded a special skill.

105. To test whether paint was applied before firing, one should scrub a small section of each color with water. Water will normally remove unfired paint although occasionally alcohol may be needed. Or better still, if the jar is valuable, use the point of a knife, which will easily remove the paint without touching the clay beneath it. On the other hand, if paint was applied before firing, the color can be removed only with an abrasive like ground flint or by scraping away the painted clay with a knife. Usually the paint which has been applied upon a wash is removed more quickly by water than that which has been painted directly upon the fired body. This was our observation with Late-Bronze sherds. If any true imported glazed Greek sherds are tested they must be watched very closely, for the alkali in the glaze may have broken down during the years that the sherds have been lying in the ground. If it has broken down, then the color may be easily removed by alcohol and sometimes by water. Thus glazed sherds should be handled only by an expert, and indeed when there is any question about painted ware, it should be submitted to an expert ceramist.

106. Only a little painted ware was available for kiln tests. At 970° C. a small black perfume juglet from Stratum A and a *bilbil* from Stratum C both lost their black completely, thus proving their black to have been organic. A small *bilbil* neck when tested at 1030° C. lost much of its blackness and what remained seemed to be more of a dark brown. The white stripes painted upon it, came through unchanged. At 970° C. a B bowl rim painted red showed no color changes. At the same temperature a pitcher from C with

a brown stripe between two red stripes showed no change in the red, but the brown had darkened considerably. From a J storage jar, the red of the net design completely disappeared and was therefore an organic color. The white remained. At 1030° C. a C milk bowl in brownish black remained unchanged as did a Mycenaean stirrup-vase with dark red lines. We have made only a few attempts at interpretation of painted ware. In the case of the imported wishbone-handled ware, the original seems to have had an excellent white slip which looks much like a ball clay⁷ and the design had been painted upon this slip before firing. All other sherds showed an inferior slip and the painting had been done after firing. The actual brush work on the sherds had in most cases been speedily and skilfully done, with an understanding for the fitness of design.

107. To reconstruct the technical history of the imported base-ring ware in Palestine is a more complicated task. The best ware seems to be black throughout the entire fracture and apparently this was secured by a reducing fire. Another type of this ware shows a good black center, thus proving reduction in early firing, but the exterior was in places brownish red, as if the fire were slightly oxidizing in the kiln just before the ware was finished. Some of this ware when submitted to an oxidizing temperature turned a beautiful rich red, but another piece while losing much of its blackness still retained some, modifying other parts to a dark brown, which was a different brown from the sherd itself. This last was tested at 1030° C. Apparently this sherd had been painted although the color had broken down in the firing. A cheaper imitation was made by painting the exterior after the red clay ware had been fired. An examination of the interior of the sherd will tell which method of "black" was used. In fire tests the white color remained on all sherds. A still cheaper imitation was not only crude in shape, but no attempt had been made to paint the red ware. None of this last type was found at T. B. M. No chemical analyses of paints were made.

108. After having discussed the decorative factors used in these wares, perhaps it is well to return to the story of one of the more expensive vessels as it comes from the hands of the thrower. He takes it off the wheel very

⁷ A ball clay is one of the secondary clays which fires cream to white and has been used since ancient times as a slip to enhance the effect of red and yellow clay ware. It has excellent plasticity, high tensile strength, and has certain good firing qualities. It has, however, a tendency to craze and warp. The problem of its use as a slip is to secure the same coefficient of expansion as that of the red clay vessel to which it is applied. Otherwise the slip will peel or scale in drying, firing, or after the ware is finished. This problem is solved by the addition of ground flint or feldspathic rock or both to the slip until the slip's coefficient is equal to that of the clay of the vessel to which it is applied.

carefully lest it warp under an unequal pressure in being lifted off the wheel. He then sets it aside to dry, and this must be carefully done, since red clay may sometimes contain as much as 40% to 50% water in relationship to the dry clay, and furthermore red clay dries slowly. It must not be exposed to too much heat nor irregular drafts. When the water content is down to about 8% to 15% the clay is said to be leather-hard. The clay at that time will cut like cheese, and wherever there is any turning to be done upon the piece, it is at this stage that the potter's tool will be able best to remove the excess clay in either coarse or delicate shavings. Then after the turner's work is finished and while the vessel is still leather-hard, the handles are stuck on with the aid of a little slip. The ware is then set aside for "complete" drying, i. e., to get white hard. Drying is best done slowly and with an even protection from wind or draft. The air should be sufficiently warm to absorb moisture from the pottery and it should be at the same time in sufficient motion to replace moisture-laden air with fresh dry air. When the ware is white hard, it still actually contains 3% of the water of plasticity, plus, of course, all the chemical water contained in the clay molecules. It is now ready to go into the kiln and be fired.

109. Remains of Palestinian kilns have been found at Tell 'Ajjûl, Tell en-Naşbeh, Megiddo and Gezer; they are described in the publications. The packing of a kiln required special care for there was a variation of at least 100° C. in different parts of a small kiln, and the larger the kiln the greater the variation. A closely packed kiln gave the least variation in temperature for then the heat spread from vessel to vessel by conduction rather than by radiation. The ware requiring the most heat was placed closest to the fire and that needing the least heat was the most distant, i. e., at top and center of kiln. The problem of the distribution of the weight of the ware was also important, especially in firing bowls and any type of thin ware. Thick heavy ware belonged at the bottom of the kiln and nearest the flame. The Megiddo kiln, however, was all fired with the same kind of ware, namely, jar-stands; and it is quite likely that hurry orders would call for this single unit firing. The potter attempted to bring the heat of his kiln up evenly to all parts of the kiln, both those adjacent to the fire and those farther from it. This was difficult to do, however, with a primitive kiln, for the greatest heat was most likely to be near the point where the fire holes entered the kiln. The potter may have attempted to rectify this by additional air holes and by the use of a damper on the chimney.

110. In the kiln the changes taking place in the ware itself are chiefly the direct result of the application of heat, but are also partly due to the chemical action of some of the heated products of combustion.

1. Deposition of water containing sulphuric acid (below 100°C).
2. The evaporation of this water and driving off hygroscopic water from the ware (100° – 120°C).
3. The decomposition of organic matter, of hydrated oxide of iron, and probably certain hydrated silicates (200° – 480°C).
4. The decomposition of the clay substance ($\text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2 \cdot 2\text{H}_2\text{O}$), with loss of combined water (480° – 600°C).
5. The decomposition of carbonates of lime (800° – 900°C).
6. The recombination of oxides to double silicates and consequent contraction.

111. Fire in the kiln is normally started slowly so as to evaporate the last 3% of the water of plasticity still remaining in the completely dried ware. It should be a low smouldering fire with a good draft to carry off the vapors. Up to a temperature of 400°C . or 600°C . the fire should be continued slowly, after which it might be relatively rapid. For commercial purposes today the clay is often considered as baked at about 700°C . as a minimum. The full fire or burning stage begins at about 900°C . Technically speaking, baking is the term used of the fired clay that is just vitrified enough to bind the particles together while the ware is only moderately hard and porous. Burning is the term for firing beyond this point, but the fine distinction of these terms is not always observed by writers. If two baked articles are struck together, they emit a dull sound; if two burned articles are struck together, they emit a good ring. With the latter ware the higher the pitch the better the burning. Red clay needs plenty of air, a slow fire and no smoke, especially between 750°C . and 900°C ., if the best red color is to be brought out on the exterior and no black core is to appear.

112. There are many complications in firing. A clay with a high alkali content requires only a low firing temperature. A heavy carbon content slows up the oxidation of the iron compounds. Any calcium carbonate in the clay begins to decompose somewhere above 600°C . Gypsum and other sulphates decompose partly at 800°C . and partly above 900°C . Since the firing of the clay is as much a chemical reaction as if its component substances were chemically reacting in a test tube, the influence of all of these complications must be considered. If the clay is over-fired, its color is deadened into a brown or chocolate. With some red clays the ware will then become a form of slag, if too heavily over-fired. Normally a kiln should be held for some time at its finishing temperature and then cooled off slowly. If cooled off too quickly, the ware would crack or spall, for the rapid change in temperature produced by a draft of cold air on a hot vessel is too great a shock for red clay to stand. As soon as the ware was removed from the kiln it was ready for sale except in the case where a wash was applied or some design was painted on the fired ware. An estimate of the skill required in firing a kiln is perhaps best shown by the fact that the ancient

Greeks besought the aid of the gods at this point in their work and the mediaeval potters offered prayers before firing their kilns. Thus in evaluating the work of the man who tended the kiln that produced this native ware, we must keep in mind that he had a most difficult task. The use of so much limestone temper prevented high firing lest the limestone be decomposed and the gas thereby generated ruin the pottery. On the other hand, the potter had to fire the ware high enough to make it as vitreous as possible without decomposing the limestone. And between this Scylla and Charybdis he still had another problem, for there was probably a minimum temperature variation of at least 100° C. in different parts of his kiln. Furthermore, to the factor of temperature must be added the factor of time. Unlike many chemical reactions at ordinary atmospheric temperatures, those under high temperatures are modified by the amount of time they are exposed to such temperatures. Thus the potter's heat must be adjusted in terms of both time and temperature to secure the best wares. The fuel question adds other problems, for certain woods are better for one type of ware and other woods for other types. Whether the wood is wet or dry complicates matters still further. Some pottery was doubtless made in sections where only scrub and thorn bush were available, and in emergencies even grass and straw might be used as fuels, as in parts of Palestine today. Thus for a true judgment under such handicaps, the emphasis should be placed not upon the faulty fired ware, of which there is a fair amount, but upon the fact that there is not more of it and that there is so much good ware and so much excellent ware rather highly fired under such difficult circumstances.

113. Finally in dealing with all the technical problems of the manufacture of pottery, we must remember that there are not only the multiple problems of the clays and tempers used, the numerous and varied techniques practised in fashioning the wares and the most difficult of all problems, that of firing the kiln, but there is also the human element of the workman himself in each of these steps. There are careful workmen and careless workmen, there are craftsmen and apprentices, there are experimenters and traditionalists. Then too even in the same factory different workmen may have used different techniques, and different factories may have catered to different types of trade. There would inevitably be a difference between a rush order and a regular stock-replenishing job. The time of the year when the pottery was made also adds new complications, especially in the fashioning of the ware, because clay is sensitive to temperature and humidity changes. A study of Iron-II cooking pots demonstrates how many diversified human factors must be considered in passing final judgment on pottery. The pottery industry was organized in families and guilds (I Chron. 4:23). The average workmanship found on

the pottery, however, shows little of the apprentice's touch. In the nature of clay is probably the answer to this observation. When the apprentice was learning to throw, his poor work did not reach the market, for his practice jars would be thrown back into the clay pile while still wet to be used over again for some other ware. As he grew in skill his poor work continued to go back to the wet clay pile, but the good pieces went to the kiln. Thus the material used by the apprentice represented no economic loss. The heaviest risk with an apprentice was in the firing of the kiln, and here the apprentice probably worked a long time with the master before he was allowed to fire a kiln alone. Doubtless much of this work was passed on from father to son.

114. Now we may look at the finished pottery which has unconsciously violated some of these canons of good manufacturing. The flaws of the finished ware usually consist of blisters, cracks or warpings. Blisters, whether they had burst or not, may be occasioned by the following causes:—

If the clay is improperly prepared and air blisters remain in it, they expand under heating at the rate of $1/270$ of the volume per degree of heat, thus at least trebling their volume and causing blow-outs. This flaw likely came from the improper treading of the clay, and is most common in very plastic clay. If the finished vessel is not dried until all the water of plasticity is evaporated then steam will be generated. Too rapid generation of steam will cause the ware to blow.

Where limestone temper is purposely added, as so often in the pottery studied, then upon firing at too high a temperature the limestone will decompose and the gas thereby created will form blisters.⁸ If the piece of limestone was large, part of it may still be seen beneath the blister. Other chemical impurities may likewise produce blisters, or "blowing" as it is technically called. In general a fat or plastic clay is more subject to blowing than a lean one. If clay containing carbonaceous matter is fired too quickly, the exterior of the ware is sealed before all the gas generated by the carbon has escaped. The pressure of this gas creates a blister which is usually discolored and vitrified. This could have been corrected by proper firing between 600°C . and 900°C . Blisters are more common in jug types of T. B. M. pottery than in bowl types except where the latter have a thick foot.

115. Cracks appear as a result of too plastic a clay, improper tempering, throwing strains, drying, firing or cooling. The fault of too plastic a clay was usually corrected by the use of straw, quartz sand, grog or a felspar. T. B. M. used chiefly limestone. In drying, cracks are liable to appear in a vessel if

⁸ This limestone temper has also doubtless been acted on in part by the acids in the earth in which it was so long buried.

there is too great a variation in the thickness of the different parts of a vessel, such as a very thin edge on a thick wall or a clumsy foot on a delicate shape. These were the blunders of the thrower or the turner. If such a crack had been filled up with the same clay early enough in the drying process the jar would probably have fired perfectly, but if the repair work was delayed too long the seam would reopen in firing. If the ware was fired too fast, it might crack instead of blow. Dunting is the term used for cracks in firing. Cracking is more likely than blowing in the thick feet of bowls. Such cracks are usually on the bottom of the foot. If the crack appears on the lower inside of a bowl, i. e., just above the foot proper, then it is probably a slurry crack occasioned by the potter's using too much water on his hands in throwing the bowl. Too much strain or uneven pressure placed on the clay in throwing is the most common cause of cracking, outside of firing faults. If the fired ware is cooled off too quickly, it may crack. Such cracks are usually quite smooth, in contrast to the ragged edges of a crack caused by too rapid firing.

116. If the jar is warped, it was either thrown in too plastic a clay, or it was strained in throwing, or it had too great a variation in the thickness of various parts of the vessel. It may also have been improperly dried, or it may have been fired at too high a temperature in the early stages. Some jars will be found slightly out of shape owing to carelessness in handling when wet, especially as they were being removed from the wheel. This latter type of flaw is quickly identified by placing the hands in the flaws.

117. Since all the pottery found by the expedition was in houses, most of it was broken. Therefore, one often notices that some of it has a black center and that this black center varies in thickness. This "black core," as it is called by the potters, is usually due to the fact that the air did not get to the interior of the clay to oxidize the carbonaceous matter. Either there was too much smoke and insufficient air in the kiln between 750° C. and 900° C. or the surface of the clay had fused before all the carbon had been burned out. Normally the first fault could have been corrected by firing the furnace a few hours longer. Since, however, this was an expensive corrective and this flaw did not appear upon the exterior of the vessel, many kilns were doubtless fired for a briefer period than they should have been. The second fault could have been corrected by slow oxidizing firing until the carbon was burned out.

118. Black discolorations on the exterior of a vessel are likely blotches of carbon deposited by a sooty flame and later fixed by the fusible matter in the clay. This flaw is usually due to the lack of air and too rapid rise in the temperature. Small chemical discolorations of black may be traced to iron or manganese compounds in the clay. A green discoloration may be due to soot deposited early in the burning. Grey discolorations may be occasioned by cal-

cium sulphate. If the whole vessel is black it was in all probability made so intentionally by one of the processes already explained. Black blotches produced by the burning of the house in which the vessel was found must not be confused with a flaw of firing.

119. Porosity Tests. For the archaeologist the most useful porosity test is the one for apparent porosity rather than true porosity, which latter includes the data of the sealed pores also. The test for apparent porosity is easily made and is also the one commonly given for commercial ceramics. This figure is secured by weighing the dry jar or the dry sherd, then immersing it in water for twenty-four hours and reweighing it upon removal from the water and quickly drying it. The difference in weight gives the amount of water absorbed and the porosity percentage is then figured by dividing this weight of water by the weight of the dry jar or sherd. Because of the few sherds available for this study no broad conclusions can be drawn, but some indications of the porosity of this T. B. M. ware are as follows:—

7 A sherds	averaged a porosity of	14.86%.
4 B sherds	“ “ “ “	11.73%.
4 C sherds	of local manufacture averaged a porosity of	11.95%.
2 C sherds	of foreign manufacture (base-ring bilbils) averaged a porosity of	8.65%.
1 C sherd	of “ “ (wishbone-handled ware) had a “ “	13.75%.
1 C “ “ “ “	(Mycenaean glazed stirrup-vase) had a porosity of	17.00%.
4 D sherds	averaged a porosity of	15.83%.
3 E sherds	“ “ “ “	12.56%.
6 H sherds	“ “ “ “	16.15%.
2 J sherds	“ “ “ “	14.18%.

The porosity of T. B. M. ware was in general rather high, because of the low temperature at which the ware had been fired. 8% is a fairly high porosity for red clay ware and 17% is very porous. Fourteen small black perfume juglets of Iron II were tested so as to get an average on small-sized ware. The lowest porosity was 11.03% and the highest 15.75%. The average was 12.88%. Only three small buff juglets were available and they averaged 9.92%, quite low for T. B. M. ware.

120. Kiln Tests. In order to secure such data as kiln tests would reveal, sherds were selected from various types of pottery found in the different city levels excavated at T. B. M. Kiln tests were made upon such sherds as were available, but since their number was limited, no broad conclusions can be made from these tests. All conclusions, however, that are here stated are definitely legitimate. The sherds were tested both with a Brown electric pyrometer and Orton Standard cones # 015, # 012, # 09 and # 06. The cones are more important than the pyrometer since they record not only the

temperature but also the *work* done by the heat. This latter is very important, since ware fired a short time at a high temperature is not the equivalent of ware fired a long time at low temperature. The ancient potter had no such aid as cones but he could doubtless tell the "temperature work" of his kiln by its color to within 50° C. or 100° C. of accuracy. English expert ceramic workers in bone china could judge to within 20° C. of accuracy at the time that the Seger cones were invented.

A brief chart of comparative temperatures will help to relate Palestinian pottery to other fields.

- 625° C. lowest temperature on record in firing Pueblo pottery (many clays will disintegrate in water if fired below this point).
- 700° C. lowest temperature for commercial baked ware.
- 800° C. first kiln test on T. B. M. sherds.
- 890° C. second kiln test on T. B. M. sherds.
- 900° C. lowest temperature for commercial full fire or burning stage.
- 970° C. third kiln test on T. B. M. sherds.
- 1030° C. fourth and final kiln test on T. B. M. sherds. No Palestinian sherds tested had been fired this high.
- 1150° C. lowest temperature for commercial vitreous ware.

Some of the sherds were definitely fired at less than cone # 015, i. e., 800° C., because of the four sherds tested for shrinkage, three of them showed a 2% shrinkage, and the influences of limestone temper showed up at this temperature on two other sherds. Seven sherds showed no change. These latter were used again in tests at 970° C. or 1030° C.

The second set of sherds was tested at cone # 012, i. e., 890° C. Now only four out of thirteen sherds remained unchanged. Six sherds were tested for shrinkage. One shrank 2½%, three shrank 2%, one shrank 1%, and one showed no shrinkage. The influence of limestone temper was far more prominent this time and two large sherds completely disintegrated after a short exposure to the air, while others showed partial disintegration. Color changes now appear; pink and buff go into red and red darkens. Thus 890° C. is considerably higher than the original firing temperature for most of these sherds. Such sherds as were not changed by this test were used again in later tests at 970° C. and 1030° C.

The third set of sherds was tested at cone # 09, i. e., 970° C. They were 28 sherds distributed as follows: fourteen new sherds plus eight sherds that had been tested at 800° C. and six sherds that had been tested at 890° C. The picture presented by this third set of sherds was still more strikingly changed, for now only a single sherd (an A ring-burnished bowl) remained unchanged. Nine new sherds were tested for shrinkage; one shrank 5%, two shrank 4%, two shrank 3%, two shrank 1% and one showed no shrinkage. One sherd that had shrunk 2% at 890° C. now increased its shrinkage 1½% to make a total shrinkage on the original sherd of 3½%. The influence of limestone temper is still more striking in these sherds upon their exposure to air for two days to a week. Sherds that had been flaking hastened this process and the sherds broke down into several cores. Multiple cracks had a tendency to split the sherd up into small pieces. Other sherds completely disintegrated into dust, sand or small fragments. Poor throwing showed up quickly in warping and splitting. In color changes buffs went to pink or red and the reds darkened.

The fourth and last set of sherds was tested at cone # 06, i. e., 1030° C. As no Palestinian pottery found at T. B. M. had been fired this high originally, further tests were unnecessary. The only foreign piece which showed no sign of change was a Mycenaean painted stirrup-vase. Twenty-five sherds were tested: thirteen new ones, three tested at 800° C., eight tested at 890° C. and one tested at 970° C. An H-I sherd tested for the first time shrank 5%, a new J sherd shrank 2%, and an H sherd that had shown no shrinkage at 970° C. now showed a 2% shrinkage. A new B sherd shrank 1% and two foreign sherds showed no shrinkage. The influence of limestone temper was about the same as at 970° C. The reason it was not more prominent was because these sherds were especially chosen to be used at this high temperature and so those least likely to have much limestone temper were used. Strain cracks were more prominent and wider at this temperature. Color changes also were more noticeable as some reds went to reddish brown or to brown.

The tests seemed to prove that no T. B. M. native ware was fired as high as 1030° C. and that only a small amount was fired as high as 970° C. Most of it was probably fired under 890° C. and quite a bit of it was fired under 800° C. In general foreign ware was fired quite a bit higher than native ware. For kiln tests on painted sherds see below, §§ 121, and above, §§ 106-107.

121. *Detailed kiln studies.*

Cone 015, temperature 800° C.

Twelve sherds were selected from cities A, B, D, E, H. The major changes observed were in shrinkage. Because of their irregular shape or small size only four sherds could be checked for shrinkage. There was a 2% shrinkage in a B bowl, an E cooking pot, and an H cup. An H storage jar did not shrink. These sherds that shrank in size were originally definitely fired at a lower temperature than 800° C. as were two sherds which showed the influence of limestone temper in them after they had been exposed to the air at the conclusion of this test. One was an A cooking pot and the other was a D juglet. The 800° C. temperature had reacted on the limestone impurity in the clay which then popped and after exposure to air the lime slacked. The limestone had also produced cracks. No color changes were observed.

Cone 012, temperature 890° C.

Out of the thirteen sherds selected from cities A, C, D, H, J, nine had been fired at a lower temperature than 890° C. Sherds from two ring-burnished bowls, a pitcher and a globe-shaped perfume juglet, all from the A level, were the only sherds remaining unchanged. From the A level a sherd from an elongated one-handled juglet warped a little and split, and a hole-mouth jar sherd flaked at the edges. There was a 2% shrinkage in a C buff bowl which also cracked badly. A milk bowl from C darkened the red color of the clay body under the white slip. There was a 2½% shrinkage in the rim of a C cooking pot, which also cracked badly and disintegrated in a few days. A wine jar from D appeared unchanged except for slight spalling upon removal from the kiln, but in a few days it had completely disintegrated. A red flaky crust had appeared upon the interior of the sherd during its exposure to air. A cooking pot with steam holes from the H level shrank 2% and showed cracks. In twenty-four hours it was disintegrating along the edges. An H cooking pot of Early-Bronze type shrank 2% and went to a deep red. It showed some spalling, but did not disintegrate. A ledge-handle from J shrank 1% and its color went from pink to red.

Cone 09, temperature 970° C.

When these sherds were tested the picture changed still more radically. Only one sherd, a ring-burnished bowl from A, out of the twenty-eight tested remained unchanged. Sherds from A, B, C, D, E, H and J were used. The following changes were observed either upon removal of the sherds from the kiln or within twenty-four hours thereafter. Among the A sherds the minor changes were spalling, flaking and cracking. The jars represented were two globe-shaped perfume juglets, a small cooking pot, a cooking pot with a + trade mark, a large ring-burnished bowl and a small unburnished red-slip bowl. Major changes were a hole-mouth jar which flaked badly and within three days broke into pieces, a one-handled elongated juglet which warped and split open at one point, and a loom-weight which cracked perpendicularly along the line of the hole in several places and on the next day broke into pieces. An Astarte head showed multiple cracks in all directions when removed from the kiln. The next day the entire outer layer of the head had disintegrated into a sort of fine sand and powdered lime, but the core of the head seemed intact. By the third day, however, this core was splitting into sections. In several instances both minor and major changes of disintegration continued for a week and occasionally longer as was true also of sherds from the other levels. Limestone temper in the clay was the cause of the great majority of these changes. Only two shrinkage tests were made. One small unburnished red-slip bowl showed a 3% shrinkage and a hole-mouth jar registered 4% shrinkage. Most sherds deepened in color. A broken buff toy horse which showed a very thick black core turned to a rich red throughout as did a black perfume juglet.

Two B sherds acted as follows. A buff bowl with a red painted rim and with lime spots showing that it had originally been fired to near this temperature, shrank 1% and turned pink; in four days, however, it showed cracks and these increased for two weeks. A small buff bowl with ring-burnished red top cracked where the side rises from the bottom, probably from strain in throwing. It acted similarly to the other B sherd but with less cracking. The buff went to light red and the original red deepened.

Among C sherds one from a burnished pitcher painted with rings of red, brown, red, showed a 3% shrinkage but little other change except slight spalling and a darkening of the brown toward black. A black *bilbil* vase came out a fine rich red but otherwise unchanged. A shallow buff bowl first tested at 890° C. cracked on the exterior of the bowl and also on the inner rim and in four days had broken into three pieces. It had shown a 3½% shrinkage. A crude imitation of a Mycenaean jar with ladder design, not only gave a 5% shrinkage, but warped and cracked badly from a heavy lime content. Its color went from buff to red and its black core disappeared.

Among the D sherds a pear-shaped juglet, first tested at 800° C., now showed a crack at one corner and flaking; on the fourth day some pieces of the edge came off. A cooking pot with pie-crust rim, first tested at 800° C., now cracked under the pie-crust rim and by the next day had completely disintegrated. A wine jar from D level popped and in a few days had disintegrated. A heavy red flaky crust showed on the interior of the sherd, but this could not be accounted for except as the result of the wine's reaction on the jar.

A highly burnished carinated bowl sherd from E level lost most of its sheen and went from a buff to a pinkish red.

Among H sherds a store-jar showed no change, not even shrinkage, although it spalled slightly later. Another storage jar, first tested at 800° C., shrank 1% and spalled

slightly. An H cup, first tested at 800° C., showed large and small cracks which later opened slightly. Color went from buff to red. An H cooking pot with holes shrank 4% and showed a large crack. Later the sherd broke up.

A J storage jar with red net design cracked in all directions on the inside but not on the outside. Its red paint had disappeared and was therefore an organic red paint. The white surface remained.

Cone 06, temperature 1030° C.

This was the highest kiln test made as no native Palestinian pottery found at T. B. M. had been fired this high, and only one foreign piece, a Greek Mycenaean stirrup piece remained unchanged. The story at 1030° C. is quite similar to that at 970° C. The reason that there were not more striking changes is because sherds were purposely picked for this test which seemed more likely to contain the least limestone temper. Sherds from levels A, B, C, D, E, H, H-I, J were used. The following changes were observed when sherds were removed from the kiln or within twenty-four hours. Level A minor changes were spalling, flaking, pin cracks and color deepening. Sherds represented were a large ring-burnished bowl, a small thin unburnished red-slip bowl (first tested at 890° C.), a medium-sized unburnished unslipped bowl and a cooking pot. Reds deepened or went into browns. Major changes were as follows in A sherds. A small black perfume juglet split off a corner. A large pitcher showed large cracks. Two medium-sized ring-burnished bowls (first tested at 890° C.) now cracked. A one-handed juglet (first tested at 890° C.) had two long cracks along the twist of the clay and other small cracks. A lamp cracked in a spiral about the center and broad cracks radiated out. These tests also went to a deeper red or brown.

Only one B sherd was tested, a hand-burnished rim of a medium-sized bowl. It shrank 1% and cracked parallel to the rim and at right angles to it. Slip became reddish brown, and the body brown.

No native C sherds were used. A Greek Mycenaean painted sherd came through unchanged. A wishbone sherd (first fired at 890° C.) only changed to a stronger red. A small *bibbil* lost most but not all of its black paint, but the white remained. The body went brown. There was no shrinkage measured along the length of the neck.

Of the D sherds a cooking pot with pie-crust rim showed small cracks and began to disintegrate the same day. It was down to a core in thirty-six hours and to sand and dust in three days. A large pear-shaped juglet showed no change upon removal from the kiln, but within thirty-six hours had broken into fragments.

A highly burnished carinated E bowl (first fired at 800° C.) now lost its burnished sheen, but retained a buff color on the surface. The interior, however, became red. A cooking pot with steam holes (first fired at 800° C.) cracked; it disintegrated the next day.

An H storage jar (first tested at 970° C.) now shrank 2% and showed slight popping and small cracks. An H cooking pot with steam holes (first fired at 890° C.) splintered some and was disintegrating on the third day. An H cooking pot of Early-Bronze type splintered badly and was disintegrating the next day. An I folded-over ledge-handle shrank 5% but only showed small cracks.

A J ledge handle (first tested at 890° C.) showed tiny cracks on the exterior and a deep red flaky crust on the interior similar to that observed on two D wine jars. A J cooking pot shrank 2% and showed small and large cracks.

SECTION II

DETAILED TECHNICAL STUDY OF POTTERY TYPES FROM STRATUM A

122. Most of the specimens in the Bible Lands Museum of the Pittsburgh-Xenia Theological Seminary came from the first three campaigns at Tell Beit Mirsim. Photographs, drawings and descriptions were published in TBM I, which should be consulted in connection with the following study. It must, however, be kept in mind that many of the specimens described in that volume are the property of the Palestinian Archaeological Museum and were not available for the present study. There are two notes of caution. Even under the most careful scrutiny some of the details in the pottery techniques of this ware are hard to evaluate. Therefore, when there is an element of uncertainty, the judgment will be qualified in terms of probability. This method of evaluating probability has seemed wiser than to refrain entirely from any comment on debatable factors. The second note of caution is for ceramic experts. The terminology used in this section is occasionally slightly different from that used in common ceramic publications, since this study is primarily to assist archaeologists. The ceramic expert, however, will scarcely have any difficulty in adapting himself to this slight change of vocabulary.

123. *Standard Sizes.* After examining the drawings of all the pottery found at T. B. M. in addition to studying all the pottery that was available, the authors are confident that the better Israelite potters had distinct standard shapes and sizes for their ware, although there are not sufficient data to make a clear-cut demonstration of such a thesis. Standard sizes in pottery can never be as exact as they are in metal. Metal can be cut to exact sizes and soldered into standard measures. But the variable factors in the clay used, the tempers added, the firing temperatures employed, etc., are such that a certain percentage of variation in the size of finished wares is inevitable.⁹ In the study of standard sizes the width of the piece is the most important dimension to watch, for the commercial potter was always trying to throw to a standard fixed dimension. The variation in height, therefore, is likely to be even greater than the variation in width in the same ware. Since the potter did not weigh the amount of clay for each piece but simply estimated it, and since he was throwing to a fixed diameter, any excess amount would normally make the ware a little taller, whereas too light a piece of clay would usually show up in a slightly shorter jar. Indeed, the surprising point is that there is such

⁹ In the better grade of commercial ware in ancient pottery this margin of variation is about 5%.

small variation as there is in sizes, especially when we remember that this work was speed production. The standardization of shape is well illustrated in Iron-II cooking pots of both the deep and shallow type. The former show an uncanny approximation of the same dimension for width and height. Some fifteen examples show only a 5% maximum variation (see n. 9), although the sizes of the cooking pots run from 124 mms. up to 320 mms. in diameter. The shallow cooking pots tended to show a set ratio between diameter and height. In four examples the height was 67 percent of the diameter although the diameters ran from 160 mms. to 298 mms. One closely related example used the ratio of 68.5%. Four other examples gave the ratios 56%, 59%, 61% and 63.5%, or an average of 60%. At least the 67% ratio looks much like a standard size.

124. Volume content could not often be measured because of the broken nature of most of the pottery. It had all come from houses, and with rare exceptions only the smaller vessels had escaped breakage. Such data as are available are as follows:—

Fifteen of the small black perfume-juglets were in perfect condition and their volume could be measured. This volume is measured to the rim of the juglet so as to have a definite unit volume, although of course, the perfume juglet was never actually filled to the rim. The volumes measured in cubic centimeters are: 21, 22, 28, 30, 30, 31, 32, 33, 34, 36, 39, 40, 45, 46, 51. The average volume for these juglets is 34.53 c. c. If one eliminates the two smallest juglets, which seem to be out of the average, and the three largest, which appear to be too large for the average, the remaining ten juglets average 33.3 c. c.

Eleven one-handed round juglets were in such condition that their volume could be measured. Again measuring them to the rim in cubic centimeters, they are: 100, 101, 113, 129, 139, 165, 191, 203, 280, 296, 457. The range of volume is too great to strike an average, but it is surprising to note that there seem to be units approximating 100 c. c., 200 c. c., and 300 c. c. Three juglets approximate 100 c. c. (100, 101, 113), two approximate 200 c. c. (191, 203) and two approximate 300 c. c. (280, 296). The neck of one jar was missing but measured up to the junction of the body and the neck its volume was 325 c. c.

Twenty elongated one-handed juglets (with wide mouths instead of the narrow-mouthed type just noted) gave the following volumes in cubic centimeters when measured to the rim of the juglet: 138, 142, 155, 170, 171, 179, 190, 191, 196, 242, 244, 250, 250, 251, 253, 255, 259, 288, 288, 302. Again the 300 cubic centimeter shows up as an approximate unit (288, 288, 302). But most striking of all is a unit of 250 c. c. Eight juglets ranging from 242

to 259 actually average 250.5. The unit of 200 c. c. is slightly low in representatives (196, 191, 190, 179). The lowest unit here may possibly represent 150 c. c. although its average of 155 c. c. represents measurements over the wide range 138 to 171.

Of other types of ware only the following could be measured exactly. All vessels were filled to the brim. Five cups gave each a different volume, 0.13 liter, 0.18 liter, 0.32 liter, 0.41 liter and 0.58 liter. The last cup held approximately 1 *log* (0.547 liter), if we use the table of liquid measures given by Barrois in *Revue Biblique* 40, pp. 185-213.¹⁰ One small pitcher and one small oil decanter each held 0.55 liter or almost exactly 1 *log*. Another pitcher was undersize at 0.47 liter. Another pitcher held 1.06 liters or very close to 2 *logs*. Another pitcher held the odd volume of 1.33 liters. One large pitcher held 2.78 liters or just over a *qab* (2.188 liters). Another pitcher held 4.26 liters or just under 2 *qabs*. One of the two wide-mouthed jars which had been built into a stone bench, held 30.14 liters, an odd figure which is too large for two *seahs* and too small for a *bath*. Although the number of vessels measured is small, their approximation to the Hebrew liquid measures is certainly sufficiently close to assume an attempt to throw standard sizes, even if these attempts were not always successful.

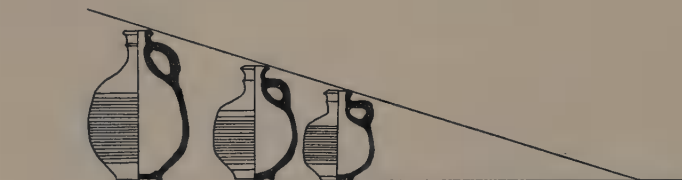


FIG. 4.

The above drawing of Iron-II water-decanter vessels illustrates another feature of standard sizes. Cf. also the graduated series of cooking pots from T. B. M. in Pl. 54, A, below. The ratio between widths and heights is constant so that the ware fits into a perfect scale of gradation, just as it does in modern pottery. This same principle was doubtless used as early as Middle-Bronze Hyksos ware for there is a well-graded series of ointment juglets to be seen in the museum of the Louisville Presbyterian Theological Seminary. The authors hope at some future time to continue this study of standard sizes in relation to other expeditions, for it is a most valuable clue to the refinements of pottery

¹⁰ If we use the equivalent 1 *bath* = 22 liters (above, § 36 and n. 7), these determinations must be modified accordingly. Then the pitchers holding 1.06-1.33 liters would take about a *qab*.

technique as well as one of the best methods of studying the subject of weights and measures in ancient Palestine.

125. *Small Squat Black Perfume Juglets* (25 specimens; cf. TBM I, p. 83).

The black color of these juglets is not an inorganic black, or it would have survived the kiln tests made upon sherds of these juglets. The black, therefore, is organic and was either smoked in, painted on, or dipped. Sometimes this black has penetrated rather deeply into the clay; rarely is it thin, and only on two juglets is it missing in spots. The color now appears as a dead black, but originally it would have been a satiny black. They were probably dipped in milk or oil and then lightly polished—a known primitive technique. This would have given the juglets a beautiful finish. They were originally fired at a low temperature. Four buff juglets of identical manufacture, but which had not been colored black, were also studied and were found not to have been fired high enough to produce the rich red color, which our kiln test brought out by firing one of them. Indeed some of the black juglets had been fired at so low a temperature that the clay in places had not baked, and the chemicals of the soil in which the juglets were found had reacted upon these underbaked spots until the clay had decomposed, leaving pit marks. As nearly as can be judged by a study of surface indications and fractures in the juglets, the clay was fairly well levigated, but some oversized limestone temper occasionally shows up.

Some of the juglets show perpendicular burnishing marks upon the body only. Others were completely burnished on the body although the work on the neck and handles was incompletely done. In other cases no attempt seems to have been made at burnishing.

The juglets were made by a time-saving technique in throwing, described in § 82. The rapid speed with which they were made is shown by the fact that the pinched-off bottoms of these juglets are seldom on the perpendicular axis of the juglet. Not only are they off center, but occasionally there is a hollow spot near by, showing that the jar was pinched off a little too high on one side. All of these bottoms were then smoothed off by the potter's hand, some crudely, some neatly, the majority only fairly well. No juglets had turned bottoms. This work was done so quickly that the wheel probably never stopped moving.

In contrast to the hasty work on the bottoms of the juglets, the necks were usually well done. The lips were neatly flared out so that perfumed oil could be poured into the juglets easily. On the other hand, the long neck with its thin diameter conserved the oil for the purchaser, as it would come out only slowly. The accuracy of the neck width is shown by the fact that about a third

of the necks will not quite admit a common lead pencil and about two-thirds of them are only slightly wider than the pencil.

The handles look top-heavy for the juglets, but they were doubtless made large on purpose so that they could be held easily in the fingers. Where the handle is attached to the rim of the lip, the work is fairly well done, but on the under side of the lip it is often imperfectly finished off and a definite line of handle against neck is plain. Where the handle is attached to the body of the juglet, it often bulges out to a somewhat unsightly shape, but usually it is at least smoothed into the bowl so as not to leave a junction line. Some of the handles are in a good parallel line with the neck of the juglet, but many more are offside than are in line, as is to be expected in speed production.

126. *Small One-handed Narrow-necked Perfume Juglets* (15 specimens; cf. TBM I, pp. 83 f.)

Surface indications and fractures show two types of clay used in making these juglets. One group contains a fair amount of temper; the other group shows a finer clay. All but three of the juglets were low fired, being colored buff. The other three were fired a little higher, but only enough to bring out the first light reds. These juglets, like the smaller black ones, are of the pinched-off variety. The bottoms were hand-smoothed like the black juglets, but here the workmanship was normally better. Several at first sight seemed to have turned bottoms, but a closer study shows simply a good hand-smoothed job. Two of the red juglets and three of the buff were finished with a slip upon which were thin burnishing strokes approximating the perpendicular, but only one of the plain juglets showed good burnishing strokes. The surface condition of the other juglets, however, is not always in sufficiently good condition positively to preclude the former existence of burnishing strokes. The workmanship on the handles of these juglets is quite similar to that on the smaller black juglets.

The narrow necks of these juglets again proclaim them to be containers for perfume. But unlike the black juglets, they are not of uniform size. They seem to run in sizes of approximately 100 c. c., 200 c. c., and 300 c. c., plus some examples not in this standard scale. The shape of the smaller ones, although they are commonly called round juglets, tends more toward the flask shape, whereas the larger ones are a good ovoid or egg shape.

127. *Small Elongated One-handed Wide-necked Juglets* (65 specimens; cf. TBM I, p. 83).

The clay seems of average working quality with large limestone temper the chief offender. Some juglets show excellent exteriors with no sign of flaws in

working the clay, and are able to take a good burnish without the use of a slip, thus implying a rich iron content in the clay, as verified by a kiln test. Slip was not commonly used, and when used it was normally on a poorer type of clay. The juglets were low fired, being more often in the buff than the red color range. One is shown to have been very low fired by the fact that the surface is half decomposed after centuries in the soil; another shows some surface decomposition.

The necks of these juglets are wide enough to enable study of the interior of the juglet, and furthermore in a number of instances the fractures of the juglets enable us to get sufficient data for evaluating the thrower's skill. The best throwing jobs have good shapes, thin walls and smooth exteriors. Some wares are delicately thin. If the jar is broken so that the interior can be accurately noted, it shows evenly spaced and quickly rising thrower's marks, thus showing the piece to be quick as well as accurate workmanship. The exterior finish is done with either the finger or a smoothing rib. Mediocre work usually kept a good shape, but did not give such thin walls nor such smooth exteriors. Often broadly spaced thrower's rings give the exterior a corrugated effect. Poor workmanship gave clumsy shapes, heavy walls and irregular exteriors. In general, the larger juglets show better craftsmanship, although some of the smaller ones are excellently done.

Like the other juglets these were pinched from a great cone of clay and thus have pinched-off bottoms. In many instances, however, they were so well smoothed off by hand that the "button" made in the pinching process hardly appears. In a few cases, the work is so excellently done that the bottom appears at first sight to be turned; but upon re-examination no definite cases of turning could be proved. The better thrown pieces normally have the better finished bottoms, although not all well-thrown pieces have equally well finished bottoms. There often seems to have been some lack of care in this last detail. The interior bottoms of these juglets can be studied with a flashlight, and they show the strain on the clay made in pinching off the juglet. Some interior bottoms show a little twist, some show more, and some show the clay so twisted as to be split open in part. Only one jar shows this strain split on the exterior.

In general, the better shaped jars have the better handles. In the application of the handle to the lip of the jar, the work is normally much better than in the application of the handle to the shoulder of the jar. In the smaller jars more handles are off the perpendicular axis than on it; those to the right of the axis are about equal in number to those to the left of the axis. In only two cases were lips deformed in putting on the handles before the juglets were sufficiently leather-hard for the handles.

More than half of these juglets were vertically burnished, nearly always on

the original surface of the juglet, as slip was not commonly used on this ware. One juglet bears a trade mark. Another has holes in the bottom and a special turned-in top instead of a rim, as well as a much narrower neck. This arrangement enables one to hold his thumb over the top of the juglet so that nothing escapes through the neck when the juglet is used as a sifter or sprinkler. This vase is closely burnished on a slip.

128. *Imitation Cypro-Phoenician Ointment Juglets* (10 specimens; cf. TBM I, pp. 84 f.).

The Israelite potter could not produce a glaze, and so when he imitated the beautiful Cypro-Phoenician ware he used instead either a highly burnished rich iron slip producing a deep red to brown color, or he made no attempt whatsoever at imitation of the glaze beyond lightly burnishing a well levigated clay. Indeed, in some cases he did not even burnish the clay. Most of these jars show a simple painted design. One may conjecture that all were once painted, but that chemicals in the soil have dissolved most of the poor pigment.

Most of these juglets have a two-section effect for the necks, the upper part of the neck fitting like a close funnel on the lower part, to which the upper sections of the handles were joined. Some were actually made that way. In others the neck was thrown as a unit and only the appearance of a dual neck suggested. The neck of one juglet has this junction point so neatly turned that it acts as a fillet tying the two handles together and giving extra emphasis to the fine proportions of the juglet. Two shapes are represented. The globular bodies have a flat base averaging about 30 mms. or more. The others have more elongated bodies, made in part by turning away more of the lower part and leaving a flat base of only 15 to 20 mms. The juglets with false-sectioned necks have the poorest handles. In one case the handles, which belonged to the loop family, were merely pressed against the neck and shoulder of the juglet and are thus a kind of *appliqué* work.

129. *Small Amphoras with Button-base* (7 specimens; cf. TBM I, pp. 80 f.).

The clay used in the best jars was very well levigated. The best jars also give the appearance of superior throwing. It must be noted that this is a difficult form to make by throwing only, as was done in two cases (the others were probably thrown and turned). Upon handling the jars or looking at the drawings of them, it will be seen that sometimes the shoulders are not of uniform thickness. The bottoms have been pinched off, as can be easily seen by flashing a light into the interior of the jar. A narrow hole appears here in the center of the button and sometimes the twist shows. The preservation of the button-base is an interesting example of the use of structure in design. All other pinched-off wares in Iron II have eliminated this structural detail.

The specimens handled vary from extra light to extra heavy. In pottery a jar's weight should be in proportion to its appearance—it should weigh about what it appears to weigh. In this type of jar light weight is expected, just as in a hole-mouth jar heaviness is looked for. In this amphora class, one is then not surprised to note that the better shapes have correct weight and the poorer ones have too heavy walls. Within the amphora class there is also quite a variety of shapes, as can be seen by examining the drawings. In only one specimen examined—and it was poor workmanship—were the thrower's marks prominently visible on the exterior. Usually only slight traces of them appear toward the bottom, in cases where the smoothing work had not been completed down to the last detail.

Five amphoras have a slip in various reds and browns but apparently no burnishing, although in two of these cases the slip is missing in places, so we cannot be dogmatic about the burnishing. Two others have slip and a perpendicular burnishing on the body of the jar. One of the latter had spiral burnishing about the neck; the neck of the other amphora is missing.

The better jars have handles carefully finished and well placed. One poorer type had both handles off center and one higher than the other. In one excellent shape the walls of the neck were too thin. Apparently the thrower had misjudged the amount of his clay, and at the last minute had thinned out the neck so as to avoid discarding this piece, as it could not be easily modified into another form.

Three of these amphoras with unburnished slip were decorated with paint bands: one white band on the shoulder, and another about 15 mms. to 25 mms. below the handle, apparently painted after firing. On the body of one burnished jar are three concentric rings, but the original colors cannot be determined. Here also they appear to have been painted on after firing. But in all cases the condition of the paint is such that no dogmatic statement can be made as to whether paint was applied before or after firing.

The way in which one of these jars was cracked and warped shows that this happened when it was subjected to excessive heat at the time of the city's destruction rather than when it was originally fired in the kiln. One of the jars was a crude imitation.

130. *One-handed Jugs and Pitchers* (12 large, 13 small specimens; cf. TBM I, p. 82).

These jugs and pitchers represent a very common type in Iron-II. Twelve of the specimens in the museum are large and represent one class with three subdivisions. The best shapes are the tall ones of which TBM I, 58: 7 (S. N. 1508) is the outstanding example. This jar is worthy of a place in any period

in the history of ceramics. It represents a robust pottery form, showing a vitality and spontaneity which are sometimes missing in the more mathematically balanced forms of the Greek potters. Here is the free sweeping line not spoiled by precision nor with the over-done contrasting curves found in some of the best Greek ware. This pitcher has more of the free spirit of the Chinese. The complementary band at the neck is artistically done and the handle completes the lines of the jar. The five examples of this sub-class are all accurately and quickly thrown and turned. One is of such excellent clay that it is hard to believe that it does not bear a slip. Below this high standard we have three examples similar to TBM I, 59:9 (S. N. 1099), although this vase, which is in Palestine, has better lines than our best jar in Pittsburgh. The latter (TBM I, 38:1, S. N. 695) lacks the vitality of line in the first sub-class and has more of the squeezed-in form. The handle does not go so well with the jar nor is the complementary band well done. It is, however, a highly fired piece. The poorest type, of which there are four examples, is represented by TBM I, 58:1 (S. N. 1368). The faults of this last type are the following: the poor shape is due to poor throwing and the too narrow bottom with its adjacent thick wall is the turner's fault, which he could have corrected by the use of a ring-base instead of a flat bottom. The blisters in the pitchers are due to the presence of too large pieces of limestone temper in the clay. Indeed the clay in three of these poor jars reminds one somewhat of the heavy-tempered clay used for cooking pots.

Except in the first sub-class where there is only a little turning above the foot, most pitchers have the lower half or the lower third turned. Where the tool-mark shows, it is about 10 to 12 mms. wide. This turned section is either left with the tool marks showing or is hand-smoothed. One of the tall jars is smoothed perpendicularly—an unusual method. The upper parts of the pitchers have the thrower's ring still visible or they have been smoothed down either with the hand or a tool. The poorer shapes have flat bottoms, the better shapes ring-bases. The functional value of a ring-base is seen in these jars better than in any other type, for the constant placing of the water pitchers on the stone curbing of cisterns had chipped off many small fragments of the ring-base but the ring-base itself had absorbed all of the shock and the jar proper remained uninjured. Only two of the ring-bases were carelessly done. Handles were fairly well executed, especially at the neck where they widen out into the lip. Some, however, have sprung or have twisted out of plumb in firing. Albright points out that pinched lips become increasingly rare in Iron II, although we have several in the museum. No pigment was used except in one case, where a 15 mm. band appeared just below the handle. This band is true to the skew of the jar and not to the wheel.

Two of the smaller pitchers belong to the sub-class of tall pitchers, which was first described, but they represent a smaller standard size. The other pitchers are of various shapes, but since they represent poorer craftsmanship and no new factors, they need not be treated here. Three of these pitchers may better be considered as one-handled cooking pots and will be treated under that category.

131. *Cups or Dippers* (11 specimens; cf. TBM I, p. 82).

These cups are usually treated in TBM I, following common usage among archaeologists, as members of the pitcher class, but they should be treated as a distinct group, for they are normally both shorter and broader than pitchers as well as much wider mouthed in proportion to their size. Of the groups studied, eight were slightly wider than their height and two others had identical width and height. The other cup (S. N. 806) is hard to classify and may be either an odd-shaped cup or an unusually small pitcher. Its proportions are more like a pitcher, but it is too small to be used as such and yet it does not seem to be a toy for it differs considerably from all toy dishes. These cups were doubtless used also as dippers. Only one of them was made without a handle. (An ancient cup did not necessarily need a handle, but a dipper did.) The mouths of these cups show that they are too large to be classified in the pitcher family. Three measure 63 mms. from center to center of rim, one measures 66 mms., two measure 69 mms., two measure 72 mms. and one 76 mms. The rim of the last cup is too badly broken to get an accurate diameter. The odd cup or pitcher measures only 49 mms.

The clay used in the cups varied from a paste with a fairly heavy limestone content down to an almost clean clay. All were apparently thrown individually and usually showed good workmanship. All but two have hand-smoothed bottoms, usually very broad. Two have turned bottoms. Sometimes the thrower's spirals show and sometimes the surface shows the smoother's tool. About half of the handles are on a good perpendicular and the rest slant downward toward the left. One was fired to an unusually rich red and its limestone temper had popped off some rather large pieces of the outer surface of the cup.

132. *Ring-Burnished Water Decanter* (6 specimens, 1 toy imitation; cf. TBM I, pp. 82 f.).

The ring-burnished water-decanter represents one of the best shapes in Iron-II pottery. At that time this piece of pottery was strictly utilitarian, but today its lines would lift it into the truly beautiful and ornamental. It is an adaptation in clay of an original metal form, but it is a good adaptation. The lower part of the jars all have the true clay form. There is a touch of

the metal joint at the shoulder where the clay shows a small bulge, but it is still a clay shoulder. The handles add greatly to the lines of the jar and they show the best work on handles done on any type of pottery in Iron II. The junction of the handle and the collar of the neck is of the highest craftsmanship. The handles are thin and two-ribbed.

Burnishing effects vary. The most beautiful burnishing is done on a heavy buff pinkish slip with a rather narrow tool that leaves relatively deep furrows which overlap or nearly so. This is the treatment on the surface of the body below the shoulder except for the extreme lower section of the jar which is out of sight. This latter part is in all but one case left unburnished. The shoulder was at first ring-burnished, but most of this work is concealed below a reburnish done with oblique lines radiating from the neck. At first glance the rich play of light upon this highly burnished decanter gives it the appearance of a true glaze instead of a mere burnish. In pleasing but striking contrast to this piece is another large decanter (TBM I, 59:6, S. N. 532), which was given only a thin dark grey slip, and its wider, lighter strokes of burnishing were made with a flat tool. The treatment on the body shows almost continuous touching of the bands of burnishings, but the shoulder gives alternate rings of burnish and plain slip. The neck was perpendicularly burnished.

On one of two smaller jars examined, the ring-burnishing of the body is continued in theory upon the shoulder. But actually the burnishing is a free hand "U" shape with the handle of the jar occupying the blank space in the "U." The other small jar has a shoulder treatment in oblique lines as in the first jar described. The normal treatment seems to have been to burnish the jar after the handle was put on. The burnishing work is so carefully done that only occasionally do the impurities in the clay, such as small limestone fragments, appear. All specimens have ring-bases, except the cast one.

There is a toy that has a modified decanter shape, accentuating the shoulder junction. It is covered with a rich deep red slip, but is unburnished. It has a string-cut bottom, only roughly hand smoothed.

One of the water-decanter is unique among all our vases, as it is the only large cast piece (S. N. 1126, below, Pl. 54, A:6). The peculiarity of the cast technique used in this decanter has been treated in §93. The shape of the decanter is not matched by any of the others found; it has lost all signs of its metal ancestry and has an egg-shaped body. The handle and neck are broken, but enough remains to show that both of these features are also different from the other decaners. The shape of its foot is unique. At first glance it might be taken for a ring-base with a boss in its center. But at second look its outline is quite different from a true ring-base. A light flashed into the floor of the interior of the jar shows reproduced in minute detail the form

which one sees on the outside; and this is possible only in a cast piece. All evidence of the junction line of the mould on the exterior of the jar is missing since the surface was completely burnished clear down to the base itself, on a very rich slip. Not only does the base prove this a cast piece, but also the interior of the jar, since it shows no evidence of the thrower's ring but presents the surface of a cast piece. Most of the handle is missing but it shows a black core at the stump.

133. *Small Oil Decanters* (9 specimens; cf. TBM I, p. 84).

This juglet seems to be a cheap modification of the large water-decanter with special emphasis upon copying the neck and handle of that type rather than the body. These bodies represent a globe shape, a squat pear shape and an inverted elongated pear shape. Upon two jars there is a white band around the body below the handle. One has a white band about the center of the body. These jars do not belong to the pinched-off juglet family, but there is some evidence for the view that they were thrown on top of a large cone of clay and then cut off with a wooden stick and hand-smoothed. Some, however, were thrown from individual pieces of clay. After being cut off they were smoothed by hand and only three of them (all globular) were poorly done. One narrow bottom was apparently made by throwing a wide bottom, then cutting some of it away and finishing it with hand-smoothing. The handles are round or slightly ribbed. The better ones are true to the perpendicular axis, but are not as good as those on the water-decanter. One handle shows a particular treatment. Here a wide junction flap three times as wide as the handle is applied to the calyx lip.

134. *Ring-burnished Bowls, Plates and Saucers* (24 specimens; cf. TBM I, pp. 85 f.).

These bowls employ a good grade of clay to which some limestone temper had been added, as the lower parts of the bowls will usually show. Occasionally even the interior is injured by limestone temper, but this is only when the slip has been popped off by the high firing of the bowl. The interior of the bowl is usually heavily coated with a rich red ochre slip that covers any defects in the clay body. The form of these bowls is good with plenty of subtleties, when the bowl itself instead of a photograph or drawing is studied. These bowls have a nicety of line which the Greeks modified into their mathematically perfect form. The Palestinian bowls, however, have a spontaneity of form and a vitality that is more Chinese than Greek in its effect. Within this general class of ring-burnished bowls there is a good variety of minor shapes and none strikes one as ugly.

The throwing is excellent craftsmanship, especially when one realizes the mass production of this type of ware, for its sherds are one of the most characteristic Iron-II types, found all over Palestine. Cases were rare, however, in which the bowl was exclusively a thrower's job. Usually it was a combination of throwing and turning, for the lower two-thirds of the exterior of the bowl was normally turned. The thrower's skill, however, always shows in the subtle lines above the turner's mark on the exterior of the bowl as well as in the interior. The turner's work on the lower exterior of the bowl is often so skilfully blended into the thrower's work that in order to find the junction line one must turn the bowl over and search for the tool marks. The turner's work extends up to the complementary swell in the bowl just below the widest point of the rim in about half the cases studied. And in others it stops short of that point by 1-3 cms. Thrower's flaws of straining the clay and leaving slurry marks are rare. The turning is on the part of the bowl that is not seen and therefore it was always swiftly and often rather superficially done. It may be left with the polish of the tools showing or with a slight wet smoothing. Rarely is it carefully finished.

One of the large banquet bowls (TBM I, 60:9, S. N. 1300), however, used the turner's marks upon the exterior as a special design—closely spacing them near the foot, i. e., about 4 mms. apart, then gradually widening them until near the complementary swell where the spacing reaches approximately 15 mms. These tool-marks are accentuated by the concave tracks they leave whereas the ordinary tool leaves a flatter surface. Upon most ring-burnished ware the tool-marks will overlap one another, but where their individual width can be measured, they run from about 10 mms. to 15 mms. This combination of throwing and turning speeded up production and greatly reduced the number of discards from warping. Under this technique the bowls were thrown extra wide at the bottom so that this additional width could carry the weight of the thinner upper section. Then, when the bowl was leather-hard, this wide section at the bottom was pared away by the turner until there was left a thickness proportionate to the upper part. Sometimes these bowls were turned before they were completely leather-hard and this accounts for the chatter marks occasionally found. The bowl was finished off with a disc or ring-base, the latter being the better and more common type. Indeed, in speaking of bases, not a single one of all the ring-base family rocks on its base—and that is a good commercial record. Only rarely is a plain flat base left unfinished. In craft terms these bowls show the work of skilful craftsmen working fast, thereby producing good wares at a minimum price.

The burnishing work on the interior of the bowl is in striking contrast to the poorer turning normally found on the exterior. The spirals are well spaced

and the pressure on the clay slip equalized, thus giving a beautiful play of light on the alternate dull and burnished surfaces. The burnishing runs from the rim to the center of the bowl. It does not go over onto the exterior of the bowl in late Iron-II ware, although occasionally the slip itself does run a little way over the outside. The archaeologist does not appreciate the beauty of the spiral design as much as the modern ceramist, who cannot make a spiral upon his jigger, so his best hand-painted plates are usually decorated in concentric circles.

The small thin-walled bowls and saucers in this family remind one in their shape and thinness of some modern table ware, although the subtle lines of their form are much superior to the average commercial grades of today. Here the clay is the best levigated of all contemporary ware and the limestone temper the least troublesome, although this most delicate ware was fired higher than most other pottery. The thin edges testify to good clay and good craftsmanship. These delicate forms are also the most difficult to lift off the wheel without injury. The problem of the bottom of the thin ware was solved not by giving the bowls a ring-base as in the larger ware, but by turning a slight concave depression in the exterior bottom of the dish—the best solution for thin ware. This ring-burnished ware, although very common, was apparently somewhat expensive, at least for many households where we find the cracked bowls mended for further use. Apparently this was the only type of pottery that was mended. Small holes were bored on either side of the crack and the bowl repaired with a copper wire.

135. *Lamps* (15 specimens; TBM I, pp. 86 f.).

Lamps were apparently thrown faster than any other ware. There are far more mussy finger-marks showing on the bottoms of these lamps than on any other type of ware. This flaw is present often even when the bowl of the lamp itself is very well done. The bottoms of the lamps were more poorly executed than on any other ware, being often left with the string-cut marks unsmoothed or cut off with a knife and the rough clay chunks left. There is some evidence that a few of the lamps were cut off from a cone of clay rather than thrown as individual pieces. They lack the high foot often seen in lamps of this period from more northern sites. Lamps were thrown like saucers and the wick point was made by pressing back on the edge of the rim with the thumb and forefinger. Only one of our lamps is too heavy and it looks clumsy. The rest are divided about equally between light and average weight.

136. *Hole-mouth Jars* (6 specimens; cf. TBM I, p. 79).

The hole-mouth jar is a precursor of the modern crock and was sturdily built for heavy usage. It is the most natural wheel-made clay shape—a tall

cylinder. The modifications possible in so simple a shape in both side walls and rims are seen in the drawings of this type of pottery (TBM I, pl. 52). The bottoms of these jars were turned and then hand-smoothed. The same drawings illustrate this turning work. Insufficient turning was done upon Nos. 7 and 8, the bottoms of which were not shaved off to correspond to the width of the side walls. There was too thin a bottom for good craftsmanship in No. 2. Incidentally the apparent flaw in No. 3 near the bottom of the side wall is simply the impression of the potter's hand made as he lifted the jar off the wheel. The clay usually contains quite a bit of limestone temper. One jar even showed a surface somewhat like the bottom of a fired cooking pot. Three of the jars had broken blisters on the exterior of the jars due to large limestone fragments. One jar seems to have been made of true yellow clay since it was fired high enough to break a large limestone blister. It is also different in size and is apparently not of local workmanship. The throwing was a very fast job, in some cases the spirals being at least two cms. apart. The thrower's marks were either left on the exterior of the jar or they were largely concealed under a smoothing tool. This smoothing was the same fast job as the throwing and the turning.

137. *Cooking Pots* (10 specimens and 1 toy; cf. TBM I, pp. 81 ff.).

The cooking pot brings up two problems of manufacture: quantity and quality. No other type of pottery was used so widely or broken so often; thus its replacement gave continual employment to the potter. The cooking pot also involves a special problem in the type of clay used, for these pots are subject to sudden and extreme changes of temperature, which will crack them unless the clay is specially tempered. The ancients usually added sand, quartz, grog, i. e. ground potsherds, or similar substances to the clay used for cooking pots, and for best results the temper was fine in size and equally distributed throughout the clay. Sand is, commercially speaking, the best material. But apparently the potters who sold their wares in this city did not have much sand near at hand, and therefore they usually substituted a variety of limestone which, though a poor substitute, was probably the best available. The particles of temper varied greatly in size except in the best cooking pots.

It was probably the art of blending cooking-pot clay and properly firing it with this heavy limestone content that led to the use of trade-marks on cooking pots in the Iron-II period. Numerous varieties of trade-marks are found on this pottery, but unfortunately the specimens in the museum were too few to permit any conclusions as to the difference in the trade-mark ware. In view of its heavy limestone content, this ware had to be fired at a somewhat low temperature so that it would not blow nor crack. That it was often low fired

is shown by the black core frequently found in this ware. This low firing naturally did not make a vitreous ware, but since the pots were used only certain hours of the day, the leakage problem would probably not bother the user. There is a wider variety of skill in the throwing of cooking pots than in any other type of ware. It runs from the work of the apprentice to the work of the most skilled craftsman. Some of the latter ware has such accuracy and appeal that a modern ceramist considers it a true work of art. The speed with which some of this work was done is often surprising in view of its accuracy.

There are two general shapes, one deep and the other shallow. The former was more commonly used in Iron II, though functionally the shallow cooking pot seems more efficient, since it offers a larger surface to the fire and thus both distributes the shock of the heat better and boils the contents faster. Furthermore, it permits easier cleaning, and Iron-II civilization did have ideals of sanitation. Both types of jars have turned bottoms, but the turning marks usually do not show because of the smoothing work which was done afterwards, and this smoothing, if accurately done, reduced leakage and improved resistance to temperature. The handles on cooking pots, generally speaking, represent the poorest work on any type of handle. They show more finger-prints than all other types of handles studied. In some cases, two concentric rings lightly cut into the shoulder of the jar not only touch up the lines of the jar, but seem to have served as a marker for the lower end of the handle, the upper of course, being the lip of the jar.

Six of the deep type of cooking pots are in the Pittsburgh-Xenia museum. Five different sizes are represented, and their forms are not precisely identical. The largest jar, which is unusually capacious, contains large limestone grits, many of which have popped. The size of the temper in five of the other six jars is quite small. The exteriors of all and particularly the bottoms were well smoothed. There is also a tiny toy cooking pot in imitation of this style, hand-made but tooled on the neck in imitation of the ribbed necks of the large pots. Only three shallow cooking pots were available for study. Two showed heavy temper content and one only slight. The effect of the cooking flame on one of the pots had produced much popping on the bottom of the jar, but little on the upper sections out of the flame's reach. The exteriors were well finished and in one case the interior was also smoothed, though the other two only partially. There is apparently also a deep one-handled cooking pot among the pottery shapes normally classified as pitchers. TBM I, 57:16 (= Pl. 54, A:7, below) shows one which was used as a cooking pot, for it had the peculiar rough pock-marked bottom found only on a well-used cooking pot with high limestone content. Two other "pitchers" also appear to be one-handled cooking pots, to judge from the clay used and from the smoothly finished bottoms, as well as from indications of proximity to flame.

138. *Large Store Jars* (4 specimens; cf. TBM I, pp. 79 f.).

Plato's use of the proverb "In the *pithos* is the potter's art," is a good evaluation of the skill required in making a large store-jar. The very size of the jar introduces complications, for if the jar was thrown in one piece, as some were, it demanded a potter with long arms and great strength as well as practiced skill in throwing. Probably not over a dozen men in the United States could do this type of work today, since these sizes are no longer thrown.

The two ovoid large-mouthed wine-jars (S. N. 35 and 36), which were found built into a stone bench much like a modern refreshment counter, were almost identical twins in height and width although their external appearance differs somewhat. Functionally their shape is ideal for rough usage, and their heavy rolled rims are able to stand the shock of dippers upon them without cracking. TBM I, p. 80, treats these as jars for storing grain, but the stone bench and the heavy perforated stones in the same locus, as well as the fact that the jars do not conform to regular standards of size, point to use as dye-vats, for which see above, §36. In one case the lower part of the jar had been so carefully turned that the point where the turning stops cannot be determined accurately, but it gives the appearance of having been turned to a point higher up than on the other jar, where the signs of turning stop at about one-third of the height. The thrower's rings on the exterior of the upper section on the first jar, have been partly smoothed down, whereas on the second they seem to have been flattened down. The former appears to be the more lightly fired; at least little limestone temper has popped in comparison with the amount of popping on the second jar. But in both cases the clay was well worked and the fragments of temper small. Both were thrown very quickly, as proved by the rapidly-rising thrower's rings observed on the interior of the jar, where they mount in easy finger widths or better. Jars of this size must always be studied with extra caution as they are often made with coils of clay instead of being thrown. In a doubtful case the interior will show whether the jar was made by coiling clay or by throwing. The coiled technique can be told by observing the interior of the jar where the coils are pressed together or flattened out with the fingers from the inside so as to seal the joints between the coils.

There was also a sharply-pointed storage wine-jar (S. N. 1147) of approximately the same capacity. Its exterior rings, however, have been smoothed down and are not easily discernible under the excellent wet-smoothed finish except toward the top of the jar. The fine clay and finish, plus the extra high firing (to a grey green) give the jar almost the appearance of being finished with a slip. It was finished off with a large bulbous point. The turning goes about half-way up the jar.

This jar and the following one belong in the two-piece ware. The body of the

jar up to the top of the handles was thrown as one piece. Then a shallow bowl of the same diameter as the top of the body unit was thrown. When both sections were leather-hard, the bowl was attached with slip to the top of the body; then the foot of the bowl was cut off and the resulting neck of the pithos finished off with the fingers. The two-piece nature of such ware can often be detected in the drawings of pithos shapes by the different thicknesses of the two units, as TBM I, Pl. 52:14 and 53:2.

The largest jar, which required four handles, stood about 616 mms. in height and measured 407 mms. at its greatest width. It belongs to the type of jar on whose handles the inscriptions "belonging to the king," etc., are stamped. The upper rings have been smoothed down somewhat, but not like the finish on the smaller pointed wine-jar. The heavy, pulled, ribbed handles go well with the lines of the jar, but they do not have the excellent shape of handles in Middle-Bronze store-jars. The upper parts of the handles are fastened to the body where it turns in sharply toward the narrow neck. The neck on this shape and on the smaller sharp-pointed-bottom type show that they belong to the store-jar family, whose narrow neck can be easily stopped up and sealed. Both stone and clay stoppers were found. No clay seal impressions, however, were found in connection with Iron-II wine-jars, but fine ones were discovered in the Hyksos period (TBM II, §54). It should also be noted that with such large *pithos* shapes there is not only the difficult problem of the proper clay to use, but also of the proper amount of water to use in this clay body to make it plastic enough to throw into the proper shape and retain that same shape while drying and while being fired in the kiln.

139. *Animal Jars* (3 specimens).

The two bird-vases (S. N. 326 and 874) were thrown as low thick jars with a narrow neck (about 3 cms.). When the jar was leather-hard, a hole was punched at one point on the shoulder and the bird's head added at this point. Meanwhile the head of the bird (a hoopoe, S. N. 1022) had been modeled upon a stick. After the withdrawal of this stick a hole was punched to represent the mouth, and this hole was continued back to a right angle with the first hole in the head, which it intersected. Thus any liquid poured into the top of the jar would come out of the mouth of the bird if the jar was tipped forward. At the opposite side of the jar a small addition of clay represented the bird's tail feathers. No attempt was made at representing feet, and a very heavy unfinished bottom was left where the clay was cut off with a knife or other tool. Since this left a concave bottom, it is possible that these jars may have been made on a cone of clay. The workmanship on the heads is better than on the bodies. Traces of a white-wash appear on both birds.

The other animal jar (S. N. 1554) represented an ass though to the average

museum visitor it looks like a modern pig bank. It was thrown as a cylinder and, when leather-hard, a hole was punched in the wall near the base. Meanwhile the head of the animal was being made after the same technique as that of the bird. The cylinder was laid on its side and the head was attached to the hole. The open end of the cylinder was then closed with a piece of clay representing the tail of the animal. Four stubby pieces of clay about 18 mms. high were put under the cylinder for feet, and a hole about 18 mms. in size was made in the center of the animal's back. Liquid could be poured through this hole into the animal and then when the ass was tipped forward the liquid would come out of the mouth. No details of the head are featured except the ears and the mouth. The jar was covered with a heavy white-wash, and the front and back sections of the top of the animal were decorated with designs in red paint. Red paint also touched up the flanks and neck.

140. "Astarte" Figurines (3 figurines, 10 heads, 9 busts).

The "Astarte" figurines of Iron II were made in two pieces. First, a small piece of clay was rolled into a ball and then pressed into a lightly-baked clay or bronze mould to fashion the face. The back of the head was then roughly smoothed off by hand and the mould set aside to dry. The lower end of the mould was finished off in a peg-like projection below the head, where one would expect to find the neck; but the neck itself was not a part of the mould. The peg technique for figurines was never improved upon even by the Chinese. Apparently the Astarte stood against the wall, where the rough finish of the back would not be noticed. As the head dried, it shrank away from the clay mould. When it was leather-hard, it was joined to the body, which in the meantime had been made separately so as to be leather-hard at the same time as the head. The body unit was modeled by hand as a woman's neck, arms and breasts above, and as a pillar below. The pillar is perhaps better described as a snow-man or even better as a tree-trunk since it flared out at the bottom like a stump and may have been intended to suggest the tree symbolism of the Asherah cult. This flared-out effect was produced by pressing up on the bottom of the clay column, thus giving a short hollow center at the bottom. The breasts were always exaggerated and were either modeled on this pillar or added separately like the arms, which either held up the breasts or touched the body slightly below the breasts. The hands were usually indicated by simply flattening out the ends of the arms, and no attempt was made to show either wrists or fingers. The pillar-bust unit was made with a hollow center at the top to receive the neck peg. The peg was inserted into the cavity when each unit was leather-hard, after which the joint was covered with clay to form the neck. In the process this clay was pressed upward in order to finish the neck well. In many instances, however, this work was done carelessly and

the beauty of the head spoiled by the clay being shoved up so high that the lines of the face were marred. Chin details are thus usually obscured.

The clay used in this two-piece job must be the same so as to have equal shrinkage in each unit. On the best heads, however, the clay was doubtless more refined than that used on the body, since the clay used in a press-mould should be so well levigated that it fits into all the tiny crevices of the mould. Furthermore, any piece of stone however small might spoil the delicate features of a clay mould. A lean clay rather than a plastic clay is the normal type to use in a mould, although it must at the same time have sufficient shrinkage to draw away from the mould in drying. The moulds used for the heads were in most instances certainly of clay. A clay mould gives a sharp, clean line, but the moulded piece dried much slower in its clay mould than it would in a modern plaster-of-Paris mould. The clay mould was purposely baked lightly so as to give it greater porosity and thus hasten the drying of the object that was pressed into it. The slow drying of the clay must have required the use of a considerable number of clay moulds at the same time. The poor condition of some of these heads is not always due to accidents at the time of the city's destruction, but is traceable at times back to the potter, who used some moulds after they had been worn or damaged. A clay mould would probably produce about two hundred heads before being discarded, though some may have been used longer. The shrinkage of the clay moulds was probably about 15%. These clay moulds illustrate a new phase of the potter's craft. The clay moulds were doubtless made by a few potters who were good sculptors, and these men (non-Israelites?) would sell their moulds to ordinary Israelite potters scattered throughout the land. The striking contrast between the artistic merits of the heads and of the busts of the "Astartes" shows that the bodies were made by craftsmen vastly inferior to those who made the clay moulds.

At least one head in our museum has such fine detail that it suggests that it may have been made from a bronze mould (see below) rather than a clay one. Although the bronze mould was, of course, non-absorbing, nevertheless if it was oiled or wetted, the pressed clay could be quickly and easily withdrawn. Thus although the bronze mould was an expensive initial article, it lasted indefinitely, was seldom injured by poor clay, and also speeded up production since the clay object made in it could be removed at once. This latter fact also meant that the potter needed to use only one mould rather than the numerous clay moulds required by the other process. The peg attachment is distinctly a feature of bronze casting and was carried over into clay rather than *vice versa*. Eleven different moulds were used in shaping the thirteen heads. Two heads are in such poor condition that we cannot be dogmatic about them, but they do look quite similar to two good heads and may have been made from the same moulds. The hair-dressing on six heads shows two

rows of curls; four heads show three rows of curls and one head shows four. In all but one of these cases, the curls come rather far down on the forehead. The odd head is also unique in several other features besides this higher forehead. Details of the ear-curls are hard to get because they are at the edge of the mould and the potter's fingers have usually blurred them. The curls always cover the ears and the upper half or two-thirds of the forehead. Where the details of the curls can be made out, they seem to resemble the treatment over the forehead. The forehead widths were measured just below the curls and from ear curl to ear curl. They vary from 25 mms. to 47 mms. Only one measurement seems common: six examples were 36 mms. Where the details of the eye treatment show, two heads represent the eye without the lashes. Six examples include the lashes, and several types of eyes are represented in this latter class. The nose on every figurine has been injured. The cheeks are usually high and full, some almost puffed out. Just a few show a shallow cheek. Where the details of the mouth can be studied, in one case the lips were not separated, in five others the lips were differentiated. At least two of these heads were imported from Phoenicia, as they are very highly fired and not low fired like the native "Astartes."

As for the color treatment of these figurines, they seem to have been treated with a white-wash over the whole image, and areas of it or at least traces of it are still to be seen on all. The face, or the face plus the curls and the neck, was painted a rich red over this white-wash. In three instances a yellow paint appears upon the neck also, as if to represent gold jewelry. This conjecture is strengthened by a little yellow upon the top curl of one, as if to represent a tiara. Unfortunately none of our available pillar-busts show the latter details, so we cannot tell whether the color schemes are continued in the lower unit.

By their sharpness of detail the best of these heads show that the potter had mastered the technique of "pressing," i. e., the pressing of plastic clay into intaglio moulds and the securing of perfect impressions from them in a manner unexcelled by our modern potters. The heads are beautifully modeled. A purely decorative treatment was devised for the hair, while the face shows a fine feeling for sculptural planes. The eyes, though stylized, retain the subtleties of natural form, as do the forehead and eyebrows. The salience of the cheek bones and the transition of planes into the fleshier qualities of the cheeks are well expressed, while the modeling of the muscles of the mouth confirms an understanding of sculptural values beyond that of the ordinary potter. The apparently careless and rough manner of finish in the reverse of the head indicates that the potter made use of intaglio moulds of metal or bronze produced by a fine foreign sculptor, or perhaps made for his own use a mould of lightly baked clay. This he could readily do by taking a clay squeeze

from a bronze or stone relief, i. e., by pressing a piece of plastic clay onto the surface of the model and thus securing in clay an intaglio impression which when lightly burned would form a mould from which numerous clay reliefs could be readily obtained.

141. *Miscellaneous Figurines and Objects.*

One dove (S. N. 890) was hand-modeled with its wings represented only slightly on the upper body. The breast, however, was emphasized. The feet were heavy lumps of clay similar to those used on the feeding bottles. The face and tail of the bird are missing.

Our two bull-heads represent two different techniques although both seem to have belonged to vessels from which a liquid could be poured. In one specimen (S. N. 1382a from B or C), holes were punched in the nose for nostrils. Small pellets of clay were added for eyes, and a hole was punched in each pellet to represent the eyeball. The horns of the animal had been broken off. The head had factors of realism about it, especially the thick heavy neck and open nostrils. The piece was originally covered with a wash and a few red lines were also discernible in places.

The other specimen (S. N. 1229 from B) was the only one of its technique found, a cast piece. Since it was in fragmentary shape and since a few features appear which might be interpreted otherwise, the writers are not dogmatic about it. The head of the animal was not solid as in all the other animal types, but was only a clay shell averaging 5 mms. in thickness. The nostrils were not represented in detail, but the eyes were extra large for the size of the head. They were large pellets of clay and in the center of each a circle had been cut to represent the pupil. One horn was completely missing and the other was broken off. In the top of the head a hole had been punched 9 mms. in diameter. The head was a fragment and in no place did the neck sections show, so there is no clue as to how it was joined to the body. It is uncertain whether this head had ever carried a wash, but apparently not.

A tiny lamp (S. N. 655, from A) which perhaps once stood beside a pillar figurine of "Astarte" was made after the pillar technique. On the top of the pillar a tiny lamp nestles in the midst of three branches. The lamp is modeled from the column itself and has a good shape, although its proportions are heavy. A second example (S. N. 1552) is cruder and the lamp at the top does not rest in branches as in the other example.

142. *Rattles* (4 specimens).

These were thrown as a sort of broad, stubby hour-glass cylinder with a bottom. When it was leather-hard, a pebble was inserted and the open end sealed with a circular slab of clay. A hole appears in each end of the rattles

and in one case in the side wall. The exterior was apparently hand-smoothed, the hour-glass section being better done than the ends, as if it were turned between the thumb and the fingers.

143. *Toys.*

The Pittsburgh-Xenia museum has eight toy horses but none in perfect condition. All were modeled as solid pieces. The body lengths run from 8 cms. to 10 cms. The head heights run about half this or a little more. Only two of the group have a good back contour for a horse. One horse has a broken fragment on the back of the neck which probably represented a rider. Another one seems to have a saddle. Three of the preserved necks are thick and broad. One is extra long and lacks the decided forward pitch of the other necks. The only head details are ears. All the legs are broken, so no proportions can be given. Tails were represented. All examples are covered with either traces or a fair amount of a white-wash. One has alternate bands of white, yellow and red around the body, neck and head. Another smaller fragment appears to have the same treatment. Touches of yellow appear on three others. There are two other heads which seem to belong to much larger toy horses. One (S. N. 818) has the nostrils portrayed by holes stuck into the clay, and the mouth was made by pressing the same stick sideways below the nostrils. No attempt was made to represent the eyes. Another head is solid but it thins off into a hollow neck. It was apparently modeled separately from the body. It is not made like the heads of similar size used on the pouring bottles. These heads carried a white-wash, but no other color details can be noted. There is also a fragment of a large ram (S. N. 1334)—fore-quarters and all the head except parts of the horns. It had a white-wash with some traces of red. All the fragments have a heavy black core as one would expect in this type of low-fired solid clay objects. Only one horse was fired as high as a rich red, but even here the core was similar to the others.

Another toy portrays a mother carrying her child upon her back (S. N. 670). It stands slightly lower than the pillar type of Astarte. Indeed, the lower half is the normal pillar base of an Astarte with smoothing marks in the perpendicular plainly showing. The only features of the mother that are detailed are the head and the arms. The left arm holds the arm of the child which is riding upon her back, and the right arm is laid across her chest; no breasts are portrayed. The head is made like those of the early Mediterranean idols, i. e., simply by pinching the clay between the thumb and first finger to make the face. The child (head missing) is made of one piece of clay. The child's arms reach around the mother's neck and its legs blend into the pillar body below the mother's arms. The only trace of color is a white-wash. Toy dishes have been described under the types of ware which they imitate.

CHAPTER V

THE POTTERY OF THE FOURTH CAMPAIGN FROM STRATUM A

144. In 1932 we published a representative selection of all important ceramic material recovered during the first three campaigns at T. B. M. The following year we added (TBM IA) extensive material from Strata J-C of the fourth campaign in 1932, because of its exceptional value for the chronology of the Bronze Age. Since Stratum B was scarcely touched anywhere during this campaign, the scanty ceramic finds from it required little attention; they have been summarily published above, § 22. On the other hand, a great mass of pottery was recovered from Stratum A, mostly from the northwest quadrant. Nearly all intact and completely restorable pieces are published in this volume, together with many incomplete specimens and a few hitherto unpublished plates from earlier campaigns. For drawings see Pl. 13-26 and for photographs see Pl. 67-72. Even more care was devoted to accurate drawing of forms in 1932 than in previous years, and all tracings were compared carefully with the original drawings before they were passed. Pottery profiles are, accordingly, exceptionally accurate. I am not dealing at all with the question of the identification of the pottery types with vessels mentioned by name in the Old Testament, since this subject has been treated in detail by Galling, *Biblisches Reallexikon*, 1937, cols. 316-328, and especially by A. M. Honeyman, *PEQ*, 1939, 76-90, on the basis of T. B. M. examples.

In TBM I little attempt was made to distinguish sharply between complete pottery of Stratum A from the houses occupied at the end of the history of the site and pottery from older deposits within the stratum. Since there was no continuous sub-stratification which could be approximately dated, and since comparative material was scanty, any such attempts seemed rather hazardous. The results of the fourth campaign and especially the flood of comparative material now available from other published excavations have changed this situation to some extent, and we can now distinguish ceramic phases more clearly than before. It must be remembered that the chronology of Iron II became almost wholly chaotic after the publication of Macalister's *Gezer* and Watzinger's *Jericho* (cf. APB 26 f., 30 f., 35 f.; TBM I, § 99). Practically all pottery belonging to the period 800-550 B. C. was dated by Macalister in the Persian and even in the Hellenistic period, in spite of the fact that Bliss and Bliss-Macalister (working together) had dated it correctly, though broadly, in earlier publications. Sellin and Watzinger dated all their "Jewish" pottery in the seventh-fifth centuries. Only Mackenzie, at the close of his work at

Beth-shemesh in 1912, dated Iron-II pottery in the main correctly, though he was inclined to react a little too strongly against Macalister's tendency to lower dates. In my publication of the results of the work at Gibeah (Tell el-Fûl), in 1924, I rejected the chronology of Macalister and Watzinger, accepting substantially that of Mackenzie, which our work in general confirmed. Subsequent excavations at such sites as Megiddo, Samaria, Tell en-Naşbeh and Beth-shemesh have corroborated our results and filled in details. Now, thanks to Wright's work on the Beth-shemesh materials (ASE IV and V, 1938-39) and the publication of *Megiddo I* (1939), we have rich data for comparison, supplemented by earlier publications such as Petrie's *Gerar* (1928), which still has considerable comparative value.¹ For necessary modifications of the official chronology of Iron-II Megiddo see above, especially § 2, n. 1. Further data of significance may be expected from the impending publication of the Tell en-Naşbeh pottery, as well as of the Samaria pottery (which will perhaps be delayed for some years because of the War). It is very improbable, however, that any significant changes in our ceramic chronology will be required by the publication of these volumes, since we are already familiar with the excavated materials and with the type of stratigraphic

¹ For the chronology of Gerar below the EF stratum see above, p. 23 f., and the references there cited. There can be little doubt, in my opinion, that the GH town, *below* which Philistine pottery ceases, was destroyed by a great conflagration (at level 184-5) about the middle of the tenth century. The EF town which followed it, was probably founded by Shishak or Osorkon I, soon after its conquest by the Egyptians cir. 918 B. C. At this point my chronology nearly coincides with Petrie's; Galling's date (in 1929) for this phase (ZDPV 52, 245), in the eighth century (he brings the GH stratum to a close as late as the eighth) is in part quite correct, as we shall see. The EF town had a long history; successive foundation-levels of mud-brick, from 188 to 193 in different loci, show that we must allow for the lapse of a number of generations before the end of this town. The discussion of individual categories of Iron-II pottery in TBM I, § 103 ff., and TBM III, § 147 ff., indicates that most pottery from levels 188-189 belongs to the ninth-eighth century, and that this ceramic phase reaches its climax about level 190. The chart of frequencies of distribution on Pl. V also shows maximum frequency of objects at 190, after an increase in frequency beginning at level 188. After 190 the frequency of objects falls away rapidly, showing that the most important floor-levels of Stratum EF are at this level. The next higher stratum, CD, has most of its foundations at 193-195, but there is no sharp break between it and the preceding stratum; to judge from the frequency chart its principal floor-levels were in levels 193-194. There can be no doubt that this stratum, which reaches level 197, belongs to the seventh century. Stratum EF then covers the period from cir. 900 to the eighth or even the early seventh century; whether occupation was continuous or interrupted by a period of abandonment is unclear. It is unlikely that the AB stratum began until the end of the seventh century, after Necho's conquest of Syria in 609 B. C., though a date toward the end of his father Psammetichus's reign is historically possible.

evidence furnished by these sites. The Bethel excavation yielded very important results for our knowledge of the pottery of the later sixth century, but scarcely affected the ceramic chronology of earlier Iron II at all.

145. As noted in § 144, the lack of continuous sub-stratification from the ninth and eighth centuries B. C. at T. B. M. makes it difficult to date earlier deposits of pottery precisely with reference to stratification. Moreover, since virtually all floors were of trampled earth, it was often exceedingly difficult to distinguish between successive floor-levels. Where clear stratification was found, as in SE 12, 13, 22, there was no appreciable difference between the pottery of the lower and the upper levels. As noted above, § 40, the lower walls in this area probably belong to the town which was partially destroyed in 598 B. C., though a somewhat earlier date is not excluded. The pottery belongs in any event to the seventh century, though a little pottery of still earlier date turned up now and then in this area as elsewhere. The rich deposit of pottery in the pit cache of phase gamma in the West Tower (above, § 28), unquestionably belongs to the seventh century B. C.; it is throughout virtually identical in type with the characteristic pottery from the last two phases (corresponding to beta and alpha at the West Tower). In the discussion of individual groups of pottery below we shall call attention to earlier forms as they occur. Unless an earlier date is expressly mentioned all this pottery belongs to the seventh century B. C. and the beginning of the sixth. The principal homogeneous deposits of Stratum A will be found conveniently listed below in Appendix III. We shall not repeat what has already been stated in TBM I, except for clarity or emphasis, and our comparative treatment will be limited in general to the use of material of real chronological significance which has been published in the last decade.

146. On Pl. 13 are illustrated a number of large jars with rounded or pointed bottoms (Nos. 3 [= Pl. 68: 1], 5-9), corresponding to forms published in TBM I, Pl. 52, 53, and described there in §§ 104-5. The fine four-handled store-jar, No. 3, 62.5 cm. high, with pointed base, rolled rim and ribbed handles, is like TBM I, Pl. 52: 10 (except for the rim) and 11 (rim missing), but the type is still without exact parallel elsewhere—a fact easy to understand when one considers the vicissitudes through which such large vases have had to pass. The closest published parallel is formed by two large four-handled jars from Lachish (PEQ, 1941, Pl. 10), which have been discussed above, § 36, n. 7. The completely restored specimen may be dated by the archaic royal stamp (belonging to Diringer's first class; cf. above, § 43) to about the first half of the seventh century; it is distinctly older than our specimens, which bulge more below the handles and have more sloping necks.—

The two-handled water-jars, Nos. 5 and 6, are exactly like TBM I, Pl. 53:4, 6, as far as one can tell without necks and rims. The type resembles ASE IV, Pl. LXV:41; XLVII:21-22; LXIX:4; but the latter are more graceful and distinctly more archaic in type, with less bulge below the handles and smooth, instead of ribbed, handles, as well as a more perpendicular neck. The Beth-shemesh amphoras are credited to Stratum II b-c (Wright, ASE V, 143) and presumably belong to about the eighth century. With the latter belongs also the amphora from Mackenzie's Tomb II (APEF II, Pl. XXXVII:17), which is prevailing from the late eighth and early seventh century.—The handleless jars, Nos. 7 and 9, remain without parallel elsewhere. Since vases of this type previously discovered, were used as dye-vats, it may be that the type was commoner at our site than elsewhere.—On the technique of manufacturing the large jars of this section see the remarks of Kelso and Thorley, above, § 138.

147. The wide-mouthed, four-handled jars Pl. 13:1 (= Pl. 67:5), 2, 4 (= Pl. 67:4) were not previously represented at T. B. M. except by sherds. I know of no published parallels, a fact which is again scarcely surprising, in view of their size and the rough use to which they were subjected. In origin they appear to be a kind of hybrid between the hole-mouthed jar, which has a similar mouth and rim, the four-handled store-jar of the type *Gerar*, Pl. LIV:42 n., from the eighth or ninth century, and the wide-mouthed jar on a ring-base, which begins in Megiddo, Stratum V, and continues through various modifications into II (seventh century), as shown by Engberg, *Megiddo* I, p. 168, § 47, on Pl. 18:89-90. They owe most to the third type, all published examples of which from Megiddo are typologically, as well as stratigraphically, older than our specimens, whose bulging bodies below the handles are alone suggestive of a relatively late date in Iron II.

148. Three-handled jars with false spouts, fairly well represented in the earlier campaigns (TBM I, § 106), were less common in the fourth campaign; only one example could be partly reconstructed (Pl. 15:17). Beth-shemesh II c (eighth-seventh centuries) offers examples; cf. ASE IV, Pl. LXVII:12 (more archaic than ours). Megiddo (I, Pl. 12:61-62) offers a number of specimens, differing from ours in important respects; e. g., the top of the spout is materially lower than the rim of the vessel (however, the reconstruction of the lower part of No. 62 is almost certainly wrong and we should restore it to resemble TBM I, Pl. 53:1 more closely). Engberg has discussed this type on p. 166, § 41, where he points out that both sub-types seem to go back to Stratum IV and to continue until I. I have little hesitation in correcting the "I" to II, according to the principle outlined above, § 2, n. 1;

in this case our type lasted at Megiddo from the ninth to the seventh century. All our T. B. M. examples are typologically later than either of the published vases from Megiddo, which seem also to be stratigraphically older, as we have just observed.

149. Hole-mouth jars were less common in the fourth campaign than in the preceding ones; for examples see Pl. 15:12 (= Pl. 71:7) and 67:1-3. For a technical account of their manufacture and their functional character see Kelso and Thorley above, § 136. The chronological situation was adequately treated in TBM I, § 103, to which we can now make additions from Megiddo and Beth-shemesh. At the latter site this form was very common, ranging from II b through II c, i. e., through the ninth-seventh centuries (ASE V, 143). At Megiddo the hole-mouth jar similarly extends through the ninth-sixth centuries, being attributed to Strata IV-I (*Megiddo* I, Pl. 11: 53-57, and p. 166, § 40). The absence of the form in Beth-shemesh II a and in Megiddo V, IV filling and IV B is very significant, indicating that we cannot safely trace it back before the ninth century, or at most before the end of the tenth. We may safely regard the example from FP 183 at Gerar (Pl. LII: 31 g) as either misunderstood by the excavator (it was only a sherd) or as buried out of context. A single locus at Beth-zur (No. 151) was full of hole-mouth jars, examples of which have been published by Sellers, BZ 42, Nos. 1-4, dating probably about 600 B. C., though they may be a little later.

150. Large one-handled jugs continued to be abundant in the fourth campaign (for drawings see Pl. 14: 1-6, all wide-mouthed, and Pl. 16: 7, 9, both narrow-mouthed; for photos see Pl. 68: 5-9 and 71: 8-9, 12). For technical details see above, § 130. These jugs are perhaps the most colorless and chronologically unsatisfactory type from Iron II; even the pinched lip offers only a weak basis for dating in wide-mouthed examples of the large one-handled jug. Somewhat older than the wide-mouthed examples on Pl. 14 are the two narrow-mouthed pieces on Pl. 16. No. 7 (S. N. 2337) was discovered below the latest floor in NW 33 A-10, and may belong to the eighth century; No. 9, only the top of which was found, comes from a cistern and may belong to the same general period. The wide-mouthed jugs on Pl. 14 are common at Beth-shemesh in Mackenzie's Tombs 2, 7, 8, all from about the eighth century, as well as in Wright's II c (eighth-seventh centuries). No good parallels seem to occur in the published material from Gerar and Megiddo. The closest published type at Megiddo is *Megiddo* I, Pl. 5: 111, from strata III and II, but it is not a very satisfactory analogy. There can be little doubt that this state of affairs is accidental, at least at Gerar.

151. On Pl. 16: 1-5 (for photos see Pl. 68: 15 and 69: 4, 6) are some small

one-handed jugs with flat or slightly convex bottoms; Nos. 2-4 form a relatively compact group with narrow necks and flaring mouths. These small jugs, which average 12-14 cm. high, were also quite well represented in the first three campaigns: cf. TBM I, Pl. 66: 21-23, 26-27. The type is represented at Beth-shemesh, as in ASE IV, Pl. LXV: 37, which has the red surface sometimes found on these pieces at T. B. M. All these vases appear to belong to the end of Stratum A. The type does not seem to occur at Gerar or Megiddo, so we may perhaps regard it as characteristically Judaeen. For technical treatment see above, § 130.

152. Ring-burnished water-decanter were also rarer during the fourth campaign—certainly because we failed to clear out any large cistern. Examples may be found on Pl. 16: 6, 8 (= Pl. 68: 11-12). For technical description see above, § 132, and for chronology see TBM I, § 111, which is still correct throughout and may be supplemented by Wright's observations, ASE V, 140 f. (where I should be inclined to raise dates by half a century or so from the eighth to the ninth and from the seventh to the eighth century). We can now say that the conical body with ring-base flourished about the end of the eighth century; cf. the discussion above, p. 58, and the eighth-century parallels from Tell en-Naşbeh (below). My former observation that the water-decanter in question did not seem to occur in northern Palestine may apparently be confirmed by the Megiddo publication, which offers instead the related, but not identical, type *Megiddo* I, Pl. 4: 99-107, which had nearly the same form (except that the lip is decorated with an additional ridge) but was not wheel-burnished, being generally plain or covered with a thin red slip. The chronological span of the Megiddo parallel covers Strata IV-I, according to the excavators' records, but the individual pieces recorded are nearly all from III (especially) and II, with only 4% stated to be from IV. The Megiddo span is, accordingly, ninth-seventh (sixth) century, just as in the south (cf. *Megiddo* I, 163, § 21). It is important, however, to note that the eighth (-seventh)-century Tomb 3 at Tell en-Naşbeh (TN 2, Pl. XV: 5-6) yields decaners of the T. B. M. type, with the conical body characteristic of the late eighth century, whereas the ninth-century Tomb 5 has none of this type but one decanter identical in form with *Megiddo* I, Pl. 4: 99, 102, 103, all from Stratum III (eighth century). Note also two vases from T. N., Tomb 5, Nos. 1380, 1383, which are nearly identical with *Megiddo* I, Pl. 4: 95 (from III). This situation suggests a northward spread of the southern type after about the middle of the eighth century.

153. The commonest single category of pottery in Stratum A after ring-burnished bowls (§ 160) may conveniently be called "elongated one-handed

juglets." These vases and related types are illustrated below, Pl. 17:1-6; 18:10-30; 26, B:1-15; 70, A:1-12. For technical observations see above, § 127, where the writer's previous statements in TBM I, § 112, are confirmed and amplified. Nearly all our examples (which are again only a small cross-section of the excavated material) belong to the seventh century and the beginning of the sixth, but there are a number which can be dated earlier from their context, supported by form and execution. Thus the two juglets Pl. 18:20, 23 (S. N. 2592 and 2621) were discovered in the bottom of a small cistern under NW 32 A-12. The first (for photo see Pl. 70, A:1) is semi-continuously burnished in heavy strokes on a rich orange-to-red slip; the pinched lip (on which see above, p. 7 and n. 2a) points to a tenth-century date, but in view of the difference in detail from known forms of the earlier tenth century, we may probably attribute it to the end of that century or the first half of the ninth.² In favor of the later date is the companion piece, S. N. 2621, which is burnished in heavy strokes, characteristic of the tenth-ninth century, but has a round mouth. We may thus safely attribute both pieces to the early part of A₁. Among aberrant forms which we have included for convenience in our class may be noted TBM I, Pl. 68:34, with a high loop-handle and a long neck, which is dated by the context to late A₂. The piece TBM I, Pl. 69:23, which has a more graceful rounded form than most late examples and is incised with the letter "aleph" above and below the handle, besides having four or five parallel incisions on the front of the lip, antedates the latest building periods in the southeast quadrant; it may provisionally be attributed to the late ninth or early eighth century.

154. The one-handled jugs with rounded bottoms which appear on Pl. 17:7-15 and 68:6, 8; 69, A:1-3, were evidently used as cups and dippers; see above, § 131, for technical discussion of the type, which includes a larger vessel of the jug class (though relatively small) and a true dipper (17:7, 9, 11, 13, 15). Both types belong to late A₂, though they have relatives which go back to Megiddo V in the early tenth century (*Megiddo* I, Pl. 5:119; 7:166-7). For occurrence elsewhere in the south in our period cf. ASE V, Pl. LXVII:2, 6, 15, 16, etc.

155. Cooking pots of Stratum A belong to two types, one relatively shallow, the other deep; cf. Pl. 19:1-11; 68:14; 69, A:5; 71:10 for illustrations, and above, § 137, for technical description. The chronology of the cooking pot of

² In this connection attention may be called to the oval mouth of the juglet from Cistern 370 at Tell en-Naşbeh, published by Wampler, *Bulletin*, No. 82, p. 28, No. x22, which seems out of place in its prevailing seventh-century context. However, the oval is so nearly circular that accidental deformation is perhaps not impossible.

Stratum A has been treated TBM I, § 109; it is correct in general, but my statement that all the A cooking pots published in TBM I belonged to A₂ requires a little modification. Some of the shallow cooking pots are older than the seventh century, and one (TBM I, Pl. 56: 1) may even go back to the end of Stratum B, since it was found in debris of SE 12, between the foundations of Stratum B and A. A date in early A₁ is typologically probable. The pieces TBM III, Pl. 19: 2-3, belong stratigraphically and typologically to A₁: the former (S. N. 2512) was found in a lower level of NW 31 A-10, with earlier pieces; the latter came with other A₁ material from a small pit (Silo 62) in SE. TBM I, Pl. 56: 3, 11, came from the lower A level in SE 12 A-2, which is in general from the eighth century but may contain older material. A date in A₁ is again probable. Cooking-pot rims from A₁ are illustrated in Pl. 72, B: 1-3. Some relatively late cooking pots are of the shallow variety, so it is often difficult to judge from drawings or photographs without autopsy when a shallow cooking pot of A type is to be dated. On cooking-pot chronology see further Wright's judicious observations, ASE V, 138, and contrast Engberg's unduly pessimistic remarks, *Megiddo* I, p. 172, § 76.

156. Little more need be said about the small amphoras with button-base (Pl. 17: 16-19; 69, A: 7-8) than what was already written TBM I, § 108. For their technical execution see above, § 129. On this type cf. also Wright, ASE V, 141. To judge from their contexts, none of our vases of this class need date before the seventh century, though eighth-century dating is not everywhere excluded. *Megiddo* I, Pl. 9: 24 (probably with button-base), 27, belong to our class;³ No. 27 resembles our pieces quite closely, especially if reconstructed with button-base. Both pieces belong to Stratum III (eighth century), and thus represent a transition from the tenth-century examples, *Megiddo* I, Pl. 19: 113-114, and *Gezer*, III, Pl. 103: 1.

157. Miniature painted amphoras and related types with one handle are illustrated Pl. 15: 1-4; 68: 10, 13. For technical treatment see above, § 128. It is now possible to revise and supplement our brief treatment of the chronology of this type, TBM I, § 116, from various sources. Beth-shemesh has not been very fruitful in vases of this type; cf. ASE IV, Pl. XLIV: 24-25, for characteristic examples. Two examples are published in *Megiddo* I, Pl. 9: 2-3 (which is drawn too squat, with much too short a reconstructed neck), both of which are attributed to Stratum II, i. e., to the seventh century, to which nearly all of the T. B. M. examples belong. Gerar remains our best source of material of this type. Petrie's records must be used with caution,

³ To our class is closely related a small group of small amphoras with painted bands but without button-bases; cf. J 142, Fig. 153, from about the seventh century.

since there can be little doubt, e. g., that he has attributed to his type 71c fragmentary examples which really belong to his 81 (eleventh-ninth centuries). If we eliminate from his list of levels such ambiguous examples, it appears that his specimens of our type were found almost exclusively in levels 189-194, i. e., in deposits of the ninth-seventh centuries. I should hesitate to attribute any of our pieces except TBM III, Pl. 15:4, to a date before the seventh century; this tiny vase has affinities with the Cypro-Phoenician type discussed above, p. 9, and was discovered in a locus (NW 31 A-10) which yielded other relatively early pieces.⁴ Our type was unquestionably made in Palestine, as shown by the paste and the crudeness of execution. In view of its great abundance at Gerar, its relative abundance at T. B. M., and its increasing rarity as we go north, it was probably manufactured somewhere in the Philistine Plain, perhaps at Gaza.

158. Next to the elongated juglets discussed in § 153, black-burnished perfume juglets and related types are the commonest found in Stratum A. Owing to their excessive abundance only a few examples are reproduced in this volume (Pl. 18:1-9 and 70, B:1-15). On the technique of manufacture see above, § 125. Little need be added to what was already said in TBM I, § 113, supplemented by Wright, ASE V, 139. The earliest form after the handle had been pushed up to join the rim, a change which became general

⁴To the same general period may be assigned the thin-walled juglet x157 from Cistern 370 at Tell en-Naşbeh (Wampler, *Bulletin*, No. 82, p. 28)—note that the following juglet, x158, is a thick-walled juglet of seventh-century Palestinian manufacture, of the same type as those which we treat in this section. The T.-N. piece is, however, as recognized by Wampler, of Cypriote origin, whereas our example was probably made locally about the eighth century. Wampler has inadvertently compared his example with one from Athlit published by Johns, QDAP VI, 146, Fig. 11: 4, instead of with p. 142, Fig. 6: 3-4, as he undoubtedly intended. Johns' own comparisons with Gjerstad's material in the Swedish Cyprus Expedition yield too low a chronology; there can no longer be any doubt that many of the scarabs were dated by Pieper to the Saite period when they should have been assigned to the preceding Bubastite age; until Alan Rowe dug a Bubastite cemetery at Meidûm (unfortunately still unpublished) there was little clear evidence for distinguishing between the two categories. Cypro-Archaic I must have covered not only the entire eighth but perhaps the entire ninth century. We must assign it fully as long duration as Cypro-Archaic II, which Gjerstad dates from the seventh century to cir. 475 B. C. (Vol. II, *Text*, pp. 818 f.). On the date of Black-on-Red Ware I (III) and II (IV), the second of which seems to be characteristic of early Cypro-Archaic I, see above, pp. 6 f., n. 2. Only careful autopsy can identify the exact position of the Athlit and the T.-N. vases in the Cypriote series, since the Swedish reproductions are on too small a scale.—Since writing this I have identified another juglet of this general type at T. B. M.: S. N. 1027, on which see App. II. This example may have been made locally.

somewhere in the ninth century, seems to be represented by Pl. 18: 1 (= Pl. 70, B: 12) which has the inverted piriform body characteristic of tenth-ninth century examples (which are, however, generally larger), with the neck and handle of eighth-seventh century specimens. Since it was found well below the latest floor-levels of NW 31A-10, we may confidently attribute it to the ninth-eighth century. Similar pieces are found in the repository of Tomb 8 at Beth-shemesh (APEF II, Pl. LIV: 17, 20), which dates from the eighth century. Otherwise most of the pieces from the eighth-seventh century tombs 2-8 at Beth-shemesh approximate or duplicate our seventh-century types at T. B. M.

159. Our few lentoid flasks from the campaign of 1932 in Stratum A are grouped on Pl. 16: 10-12; the first two are ring-burnished; the last one is plain. The former belong to the same type as TBM I, Pl. 70: 15 and Pl. 71: 6. The chronological evidence is inconclusive; all our examples seem to belong to A₂. At Gerar lentoid flasks appear to last throughout the first half of the first millennium B. C. (*Gerar*, Pl. LX), and the same is true of Megiddo (I, Pl. 36).

160. Ring-burnished bowls, saucers and plates of various sizes and profiles are ubiquitous in Judaeian sites of Iron II. The manufacturing technique employed in producing them has been admirably described above, § 134. Drawings of specimens from the 1932 campaign (together with unburnished vessels of the same shapes) will be found on Pl. 20-25 (note also additional examples from 1926 on Pl. 26, A); photographs of the interior of nine vessels of this class appear on Pl. 68 and 71. To show the burnishing technique more exactly, 14 sherds of A₂ and 11 sherds of A₁ are reproduced on Pl. 72. The chronology of the type has been summarily, but correctly, outlined in TBM I, § 117; cf. also Wright, ASE V, 136 f.; Engberg, *Megiddo* I, pp. 163 ff., 168 f. My detailed study of this class of ware (cf. TBM I, 85) has not yet been written, mainly because of failure to obtain clearer stratigraphical evidence for successive phases within Stratum A in 1932, as well as because of the still scanty comparative material from stratified sites. I shall, accordingly, limit myself to pointing out a number of earlier vessels included in the pertinent plates of TBM I and III; practically all remaining pieces belong to the last century and a half of the town's history, most of them to the last generation. In TBM I the ring-burnished (so!) piece shown Pl. 65: 20 a (S. N. 491) comes from the same context as Pl. 51: 3 (S. N. 488), a typical tenth-ninth century black-burnished juglet; both must probably be attributed to early A₁; its carinated profile and curved rim are without parallel in later A. TBM I, Pl. 65: 23 (S. N. 606), with similar carination and rim, and with

coarse interior wheel-burnishing and painted exterior, presumably also belongs to the ninth century; its early date is at all events clear; cf. above, § 32. Pl. 65: 26 (S. N. 1059) is wheel-burnished both inside and outside (so!); its curved, flaring rim, resembling the rims of the two vessels just described, points to an early date, confirmed by the fact that it came from a low floor-level, though in unclear context. A date in A₁ is thus highly probable. Pl. 65: 27 (S. N. 1306), also wheel-burnished outside as well as inside (so!), was discovered in a lower floor of a locus near the city-wall, together with the early form Pl. 70: 16 and the "Asherah" sherd, Pl. 40: 2 (cf. pp. 88 f.), incised on a cooking pot of A₁ type (contrast my erroneous statement on p. 89); it must also be referred to the ninth or the early eighth century. Other examples of these vessels published in TBM I probably also date from earlier deposits of Stratum A, but the evidence is in all cases stratigraphically ambiguous. In the present volume there are also a number of early pieces. One of the bowls on Pl. 20 does not even belong to the Iron Age; No. 7 (S. N. 2372); it was found near the rock, below floor-levels containing pottery of Stratum A. Our failure to recognize it immediately as a vessel of L. B. type was due to the fact that there was only about half a meter of early debris underlying the A level and that in general there was no clear stratification at all. It almost certainly belongs to Stratum C₂, like the closely related type illustrated below, Pl. 12: 9, and described above, § 22, with comparative material. As long as the rim (which is rolled outward) cannot be exactly paralleled by L. B. forms, a date in the twelfth century (B₁₋₂) must, however, remain possible. The hand-burnished bowl Pl. 26, A: 2 (S. N. 30), which was found in mixed debris outside the city-wall just north of the East Gate, belongs typologically to about the tenth century (cf. for the profile TBM I, Pl. 65: 20 a, 23, 26, discussed above in this section, and for the knob Wright, ASE V, 137, lines 9 ff., with references), but whether it belongs to B₃ or A₁ I should not undertake to determine. Similar, though not quite identical in form are TN 2, Pl. XXI: 10-11, from the ninth (possibly late tenth) century, but their burnishing technique is markedly later. This tomb also shows that pointed rims were much commoner in the ninth century than in the following two, just as indicated by our T. B. M. evidence. Pl. 21: 6 (S. N. 2274) and 7 are wheel-burnished in coarse strokes both inside and outside, and both show early affinities in profile, as well as in decoration. Both come from the same locus, below a late context in NW 33 A-11, and may safely be attributed to A₁.—There are undoubtedly a number of examples of the eighth century among nearly 300 vessels of our general class from Stratum A which have been reproduced in drawing or photography in TBM I and III, but to separate them clearly from later vessels of our class requires both stratigraphic data of less

fragmentary character from T. B. M. and more adequate comparative material from other sites. We accordingly leave the subject reluctantly, though convinced that ring-burnished pottery offers one of the most potent future clues to the intricacies of Iron-II chronology. Once the clue has been spun, we can utilize the T. B. M. records to develop a more precise historical picture of the vicissitudes of Stratum A.

161. Lamps from the fourth campaign are reproduced in Pl. 69, B: 1-11. To our brief discussion TBM I, § 119, may be added that the high-footed lamp seems to exhibit more chronological and less regional shifting than I supposed ten years ago. The evidence from T. B. M. agrees with that from Beth-shemesh and Megiddo to demonstrate a vogue for the high-footed lamp in the eighth century as well as in the sixth and fifth; see above, p. 58, and APEF II, Pl. XXXIII: 4-5; XXXVII: 3-4; XXXIX: 4; XLI: 2; XLIV: 8; XLVI: 10, 12; XLVII: 3-4; LIV: 4-5; LVI: 18, 20; LVII: 10, 11, 15, 17, 19—all probably from between 750 and 650 B. C. in round dating.

APPENDIX I

SOUNDINGS AT ZÂHERÎYEH IN 1932

162. When we began to excavate Tell Beit Mirsim in 1926 nearly all Palestinian topographers were in the habit of identifying biblical Kirjath-sepher or Debir with modern ez-Zâherîyeh,¹ a village of over two thousand people twelve miles (in a straight line) southwest of Hebron, on the main road to Beer-sheba.² This identification was undoubtedly reasonable from the standpoint of approximate location on the map, but was very unsatisfactory from the standpoint of water supply, as well as from that of surface archaeological remains.³ However, as long as no excavations had been undertaken on the site, it would be hard to convince all scholars that the identification was impossible. As a matter of fact at least one scholar of prominence declared in favor of this identification even after our first three campaigns at Tell Beit Mirsim. Having undertaken successful soundings at Deir Ghassâneh in central Palestine, which we were able to identify plausibly with the Zeredah of Jeroboam,⁴ we decided a year later to try our luck at Zâherîyeh.

163. After the completion of the actual work of digging at T. B. M. in the summer of 1932, our Palestinian foreman, the late 'Ôdeh Jirius, went to Zâherîyeh and arranged with local property owners for soundings, which were

¹ Since few scholars interested in the toponymy of Palestine then really knew Arabic and still fewer of them had any philological training, it is scarcely surprising that the name was seriously derived from Arabic *ẓahr*, "back," and regarded as some kind of translation of Hebrew *Debîr*, explained as meaning "back" (cf. Arab. *dubr*, "back," and Arabic and Ethiopic cognates). This view was soberly put forth by Conder, Guérin, and later scholars; references are superfluous. Many topographers contented themselves by supposing that *Dahariya* (the usual spelling, following the urban Arabic pronunciation of the initial consonant) was simply a corruption of *Debîr*! With equal justification an old man of Zâherîyeh once explained the name to me as derived from *ẓahr*, "back," with reference to the first ridge (also *ẓahr* in Arabic) on which the ark of Noah rested after the Flood. That this aetiological interpretation goes back to mediaeval Arabic times follows from the fact that there has been an old rivalry between Zâherîyeh and Dûrâ, sometimes breaking out into open warfare. The men of Dûrâ enjoyed great prestige in the Middle Ages because of their shrine of Noah and their claim that the Ark first rested at Dûrâ after the Flood. Hence this rival legend at Zâherîyeh (cf. *Bulletin*, No. 74, p. 14).

² Cf. Buhl, *Geographie des alten Palästina* (1896), p. 164, n. 448, and the standard dictionaries of the Bible, especially *Ency. Bib.*, s. v. *Kirjath-sepher*, and Hastings' *Dict. of the Bible*, s. v. *Kiriath-sepher*.

³ Cf. APB 77 ff.

⁴ *Bulletin*, No. 49, 26 ff.

duly made under his supervision August 10-12.⁵ Thirteen square pits, each two meters on a side, were sunk to bed-rock. Their approximate distribution on the site is shown in the sketch (not drawn to scale but planned by taking rough compass bearings) in Fig. 5. The center of the village is almost all

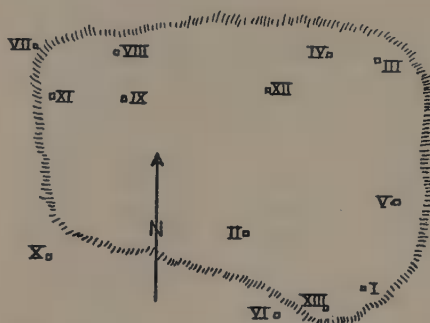


Fig. 5. Schematic Plan showing locations of soundings at Zâheriyeh

bare rock, so all pits had to be dug around the periphery of the village. No suitable area was neglected, and there can be no doubt whatever that our soundings accurately reflect the ceramic history of the site. The following details show the situation in each pit. In the absence of a survey of the site the name of each owner is given.

I ('Alī el-Wa'reh). 3 m. deep. 4 baskets of sherds, all Arabic. The top meter and a half contained mainly unpainted sherds, mostly recent. Below, the proportion of Arabic geometric ware increased until in the lowest half meter it was half geometric, with some relatively late faience. For characteristic geometric sherds see Pl. 73, B: 11-22, and for a brief description of the class of ware, with chronological indications, see Johns in ASE V, 148. This ware was current especially in the 13th-15th centuries A. D.; Johns is inclined to think it came in a century or more earlier, i. e., not later than the twelfth. I agree.

II (Ḥasan Maḥmūd Yūsif). 1.50 m. deep. The top meter yielded two baskets of sherds, nearly all Arabic unpainted, with a little geometric ware. Below was a little mixed pottery, including Byzantine sherds and a few sherds of Iron II.

III (just west of the *ḥuṣn*, which goes back to Roman times). 1.50 m. deep.

⁵ *Bulletin*, No. 47, 16 f.

In the top half-meter there was some Arabic ware, but most was Byzantine. The lowest meter was almost solidly Byzantine, with a few Iron-II sherds. By the side of this pit the Roman substructure of the *ḥuṣn* is exceptionally fine, with one stone 2.75 m. long.

IV (beside the *welī* of Imm el-Faḍl). 0.70 m. deep. Sherds mostly Arabic, with a little Byzantine and a few of Iron II.

V ('Alī el-Ḥanūnī). 4.50 m. deep. This was the deepest pit of all. Down to a meter and a half the sherds were almost all Arabic, with a little Byzantine but nothing earlier. The next two meters were about half Arabic (including a much higher proportion of geometric) and half Byzantine. Below 3.50 m. the sherds were virtually pure Byzantine, with a few pieces of Iron II.

VI (Moḥammed Maḥmūd). 1.50 m. deep. This pit was in the valley just below the village and we stopped digging after we had reached virgin soil. The pottery found was practically all Arabic.

VII (Moḥammed Ḥasan). 1.25 m. deep. This pit was just below the north-west edge of the Arab settlement. Below the top layer the sherds were nearly half Early Bronze, with a little Iron II, including an intact black-burnished juglet of seventh-century type (Pl. 73, A: 4 = 27: 3).

VIII (*ḥabalet* Ḥalīl Aḥmed Abū 'Allān). 2.00 m. deep. Mixed in nearly the same proportions down to bed-rock: mostly Arabic with a little Byzantine and a very little Iron II.

IX (*Dār Ġubn*). 2.00 m. deep. The top meter was almost pure Arabic, mostly recent, with a little Byzantine; the bottom meter contained more Arabic geometric but was mainly Byzantine.

X (*Beit Mūsā el-Āmir*). 2.00 m. deep. The top half-meter was mixed Arabic; below was half a meter of sherds, almost all of which were Byzantine. The third half-meter contained a very little Arabic and Byzantine, a little Iron II, and over 60% Early Bronze, including very late E. B. pieces. The lowest half-meter was almost solidly E. B.

XI (Ḥāmid Maḥmūd Kerkūr). 1.00 m. deep. Nearly all Arabic, with a little Byzantine.

XII (*Dār Šahīn Maḥmūd*). 1.00 m. deep. The first basket contained Arabic, Byzantine, Roman and Early Bronze; the second contained some Byzantine, over 30% Roman, and a little earlier, including some Iron II.

XIII (Maḥmūd 'Abd el-Hādī). 4.00 m. deep. The top two meters contained Arabic, with some Byzantine and a little Roman. The third meter contained mixed debris of all periods, including Arabic, with a good number of Early Bronze sherds. The lowest meter was sterile.

164. From these soundings it follows that the site was never surrounded with a wall, and that the village debris on the site has been churned up pretty thoroughly, especially in mediaeval and recent times. From the soundings, together with the evidence of tomb-groups and surface examination in the vicinity of the site, we can draw up a skeleton history of occupation which is not subject to future correction except in unimportant chronological nuances. There is no evidence of any occupation before the end of the Early Bronze (E. B. IV) ⁶ and the beginning of Middle Bronze, i. e., during late Stratum J and perhaps in Stratum I of T. B. M. Selected sherds from this early occupation are reproduced on Pl. 73, B: 1-7. Note the pushed-up wavy ledge-handle (with the edge of the handle broken away in large part), No. 1. Degenerate pushed-up ledge-handles were also found, indicating the transition from E. B. IV to M. B. I, and continuing for some time perhaps in the latter. Note also the characteristic rims of Nos. 2 and 3, as well as the flat bottom of No. 4. No. 7 is the bottom of a four-spouted lamp, also characteristic of Stratum J at T. B. M. (TBM IA, § 4). The double loop-handle of No. 6 has nothing to do with the piriform vases of M. B. II, either in form or in texture of clay, but belongs in E. B. (e. g., AAA XXIII, Pl. XXXV: 1, XXXVII: 19, XXXIX: 13) and M. B. I (e. g., TBM IA, Pl. 3: 13). The vessel to which this handle belonged, was apparently of the general type illustrated from E. B. IV by Wright, PPEB 112 (E. B. IV, No. VI) and from M. B. I by TBM IA, Pl. 3: 10. The Bronze-Age occupation of the site may, accordingly, be referred to the late third millennium, and probably to the period between the 23rd and the 21st century B. C. There was no trace of any characteristic sherds from the phase of occupation corresponding to Stratum H at T. B. M. There can be no doubt that the hill-country of Palestine, whose virgin forests had scarcely been touched at that time, was better provided with small springs than in later centuries, so there can be no surprise at the existence of occasional E. B. settlements in districts where there are no longer any springs.

165. No further trace of occupation at our site was discovered until about the tenth century B. C. In 1934 D. C. Baramki published the contents of an intact tomb of the tenth-eighth centuries in QDAP IV, 109 ff., with Pls. LXI-LXIV. As he noted, the pottery from this tomb is strikingly similar to that of Tomb 5 at Tell en-Naşbeh, which is prevailingly of the ninth century but may contain some objects from the tenth. Note especially the

⁶ For this classification of the Early Bronze Age see Wright, PPEB (1937). More recently Wright has altered his terminology and he now calls this stage Early Canaanite III B instead of Early Bronze IV. We await publication of his present views (very tempting in themselves) before changing our terminology.

numerous archaic black-burnished juglets and related types, which suggest the ninth-eighth centuries, as well as the ninth-eighth-century ring-burnished bowls (Pl. LXI: 1, second row, last two bowls, which show the wheel-burnishing inside and outside the vessel which characterizes ninth-century examples; Pl. LXII: 1, fourth vessel, which suggests the eighth century both in form and burnishing technique). I should be inclined to date the tomb between 900 and 750 B. C., though it may easily go back a little higher for its oldest interments. In August, 1932, I was shown a juglet of the elongated one-handled type, burnished in early technique and provided with a very characteristic pinched lip, probably belonging to the tenth century. The selected sherds illustrated on Pl. 73, B: 8-10, are of eighth or seventh century type; the vases in Pl. 73, A (all purchased from the natives except No. 4, which was found in the excavation) belonged to the eighth or seventh century. We can thus say that there was a village at our site during most of the period from the tenth to the seventh century. The village was probably not occupied before the time of David, when settlement became more intensive in the south, and it presumably lasted until the Chaldaean invasions at the beginning of the sixth century.

166. About the second, or possibly the third, century A. D. a Roman settlement grew up on the site, dominated by a strong *castellum* (the *husn* of today). Besides numerous open tombs of Roman and Byzantine type, Roman pottery found in the pits, a number of characteristic Roman lamps (with long spout set at a sharp angle to the circular lamp) were shown me at Zâherîyeh. The Roman occupation shaded imperceptibly into a Byzantine town, illustrated by quantities of sherds found in the pits. The Roman-Byzantine occupation probably lasted from the second century A. D. to the seventh or eighth. It was followed by a clear gap, which probably lasted until after the Crusades, to judge from the absence of transitional pottery types, as well as of all early faience. Following one local tradition, we may safely credit the reoccupation of the site to the organizing and building activity of al-Mâlik az-Zâhir Baibars (1260-1277 A. D.), which made him the most famous Mamlûk sultan of Egypt, so far as Palestinian tradition is concerned. It is, at all events, hard not to derive the name of the town from the name of this sultan, just as numerous places called Salâhîyeh derive their names from his distinguished predecessor, Saladin. Moḥammed Maḥmûd of Zâherîyeh, who claimed to have examined the *auqâf* records before the First World War, in connection with some law-suit, assured me that the original name of the village, before al-Mâlik az-Zâhir, was *Nafîlyā*. Whether the records in question actually went back to Salâh ad-Dîn, as he maintained, one may doubt, but it is by no means unlikely that his information was correct, and that this name, of obviously Aramaic origin, reflects the Roman-Byzantine name of the site.

167. The above sketch of the history of the occupation of Zâherîyeh makes it certain that the site cannot, under any circumstances, be identified with biblical Debir or Kirjath-sepher. Since there is no site anywhere in the vicinity which can be so identified, we are literally forced westward to the north-south valley joining the central Shephelah with the northwestern Negeb. The arguments previously advanced, leave no suitable site fulfilling all the requirements of sound topographical method, except Tell Beit Mirsim. This situation does not warrant dogmatism but it does make the identification of the latter site with biblical Kirjath-sepher highly probable.

APPENDIX II

SERIAL LIST OF IRON-AGE OBJECTS FROM TELL BEIT MIRSIM

This list is not exhaustive, but it includes all the recorded pottery as well as over two thirds of all other recorded objects. Nos. 1-196 come from the season of 1926, Nos. 201-832 from 1928, Nos. 849-1644 from 1930, Nos. 1718-2703 from 1932. Where the unit of measurement is not given, centimeters are understood; in each case, unless otherwise stated, the maximum measurement of any given dimension is meant. The dimensions of published objects are copied from the record book, and will thus serve as a check on scales indicated in drawings and photographs. SE loci are marked "A" only where ambiguity is possible, while NW loci, being restricted to Stratum A, are not stratigraphically labeled. References in the last column are to Vols. I (*Annual* XII), IA (*Annual* XIII), II (*Annual* XVII) and III (this volume), respectively. Note particularly the subjoined list of abbreviations:

amph	amphora	ha	handle(d)	ptr	pitcher
ba	base	hd	head	R	radius
bd(s)	band(s)	hf	half	rbd	ribbed
bf	buff	hm	hole-mouth	rbg	ribbing
bkd	baked	ho	horizontal	rd	red
bkn	broken	hol	hollow	rgb	ring-base
bl	black	incd	incised	rm	rim
bo	body	inepl	incomplete	rnd	round
br	brown	incr	incrusted	sau	saucer
bt	bottom	int	intact	sh	shoulder
bur	burnished(ing)	jg	jug	slp	slip
cist	cistern	jgl	juglet	slt	slight(ly)
cm	centimeter(s)	jr	jar	sm	small
cnc	concave	L	length	smkd	smoked
cnv	convex	lg	long	spt	spout
col	color	lge	large	sq	square
cp	cooking pot	lo	low(er)	srf	surface
cpl	complete	lp	lip	st	stone
cyl	cylindrical	lt	light	stnd	standard
D	diameter	md	middle	stp(d)	stamp(ed)
db	disc-base	med	medium	str	stroke(s)
dec	decanter	min	miniature	strt	straight
deb	débris	mk	mark	Th	thick(ness)
dk	dark	mm	millimeter(s)	tp	top
do	ditto	mo	mouth	tr	trace(s)
elg	elongated	nk	neck	up	upper
fgmt	fragment	pc(s)	piece(s)	vs	vase
fig	figurine	perf	perforated	vt	vertical
fl	flat	pi	pithos	W	width
fm	form	pk	pink	w	with
ft	foot	pnt(d)	paint(ed)	wg	wanting
g	gram(s)	pl	plate	wh	wheel
glob	globular	pot	pot(tery)	wt	weight
gr	gray	ps	potsherd		
H	height	pt	part(ly)		

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
4-2	1	Bl bur jgl int	H 6.5 W 5	deb city-wall NE	_____
"	2	Bf jgl vt bur int	H 12.75 W 8.25	"	III 26, B: 6
"	3	Gr smkd cp cpl bkn	W 17.5	"	_____
4-5	4	Sm vs (dec type) bkn	_____	Wall NE	_____
"	5	Iron tool bkn inep (3 pcs)	L 25+	"	_____
4-6	6	Up hf bl bur jgl	D 5	"	_____
"	7	Pl db hf wg rd smkd	R 7.5	"	_____
4-7	8	4-ha jr lt rd int	H 34 D 27	"	I 34: 3; 54: 1; §106
"	9	1-ha jgl lt pk bf bkn	H 13 D 6.5	"	_____
"	10	3-ha jr false spt rd br inep	_____	E Gate	I 34: 1; §106
4-9	11	Bl bur jgl int	H 7 D 5.25	"	_____
"	12	Pottery rattle int	L 7.5	"	III 32: 8; 57, b: 6
4-14	13	Hm jr bf int	H 34.5	"	I 34: 4; 52: 3; §103
"	14	Lge jr no ha int	H 48	"	I 52: 13; §105
4-17	15	Sm bowl bf enc db bd pntd rm (Iron I type) int	H 5.5 R 7	?	I 50: 5; §92
"	16	Jg rd br bkn	H 17 D 13	NW 13	I 38: 17
"	17	Min amph w rd bds rm wg	H 8 D 5.5	"	I 39: 17; §116
"	18	Min bur jgl gr bf int	H 11.5 D 6	"	I, p. 85, fig. 14: 20; §116
"	19	Sm 2-ha pot dk rd int	H 7.5 D 11	"	I 37: 12; 55: 8; §109
"	20	1-ha pot incr ha wg	H 13.5 D 8.5	"	_____
4-28	21	Bf jgl slt bkn	H 10.0 D 6.5	NW 13-9	_____
4-29	23	Bf jgl ha wg	H 10.5 D 7.5	"	_____
"	24	Bl bur jgl int	H 6.5 D 4.5	"	_____
"	25	Jg w <i>taw</i> on ha lt rd br bkn	_____	NW 13-8	_____
4-30	26	Iron II lamp db int	12.5 x 12	NW 13-9	_____
5-4	27	Elg 1-ha jgl w vt bur bf bkn	12 x 6.5	NW 12-9	III 26, B: 2
"	28	Do slt rbd int	13.5 x 7.5	E Cave	III 26, B: 3
5-5	29	Torso Astarte fig	Max W c. 8.0	Just NW of E Gate	II 25: 12; III 57, c: 6; §41
"	30	Hf rd bur bowl w knob ha rgb (B ₃ ?)	H 6 D 26	Just N of E Gate outside wall	III 26, A: 2; §160
"	31	2-ha cp bkn	_____	NW 12-7	I 35: 5; 55: 9; §109
5-6	32	Tripod lava mortar for grinding <i>kohl</i> (?)	H 12 D rm 18	"	III 30: 7; 57, d: 3; §54
"	33	2-ha cp bkn cpl	_____	"	_____
"	34	1-ha jg pt bkn	H 17	"	I 37: 13; 59: 7; §111 f.
5-7	35	Bf jr no ha rnd bt int	H 50 D rm 20	42-2/3 SE	I 32: 1; 52: 12; §105

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
5-7	36	Do (thinner walls) bkn (35 and 36 were set in masonry bench)	_____	_____	I 32: 2; §105
"	37	Hm jr bt wg	H 35 D rm 16	NW 3-4	I 52: 4; §103
"	38	Bowl 4-ha wh bur rb rd bkn	_____	42-2/3 SE	_____
"	39	Do 2-ha wh bur rb smkd bkn	_____	"	_____
"	40	Wh bur bowl no ha rb bkn cpl	_____	"	I 63: 7; §117
"	41	Sm 1-ha jg br int	H 11 D 6.5	NW 2-1	_____
5-8	42	Iron II lamp bkn	D c. 14	W Gate	_____
"	43	Sm 1-ha jg bf int	H 10.5 D 7	SE 50-3	_____
"	44	Bl bur jgl int	H 5.5 D 4.5	"	_____
"	45	Do	H 5.5 D 4	"	_____
"	46	Wh bur bowl 4-ha rb bkn	_____	42-2/3 SE	_____
"	47	Do 2-ha rb bkn	_____	"	_____
5-10	48	1-ha rd br jg rm bkn	H 13 D 6.5	SE 41-1S	_____
"	49	1-ha bf jgl int	H 7.5 D 4.2	SE 50-3	_____
"	50	Wh bur bowl 4-ha rgb bkn	_____	"	I 34: 12; §117
"	51	1-ha jg vt bur bf bkn	D 7.5	"	_____
"	52	1-ha jg bkn	_____	"	III 26, B: 11
"	53	1-ha bf jg w spt & w daubs rd & yellow pnt slt bkn	H 10 D 7	"	I 37: 22; 71: 2; §120
"	54	Wh bur bowl no ha db smkd hf wg	_____	"	I 64: 9; §117
"	55	Sm 2-ha cp bkn	H 8 D rm 12	"	_____
"	56	Med 1-ha jg db bf bkn	H c. 17.5	"	_____
"	57	Jr no ha ft ba rd bf	H c. 11	"	I 66: 14; §§112, 115
"	58	Iron II lamp bkn	_____	"	_____
"	59	Hd of iron tool	Max W 4	"	_____
"	60	Sm sau int	W 6.5	SE 41-1S	I 65: 19; §117
"	61	Iron II lamp bkn	_____	SE 42-2/3	_____
"	62	Do	_____	"	_____
"	63	2-ha gr bf pi cpl	_____	NW 3-4	I 52: 14; §104
5-11	64	1-ha jgl br bf int	H 10.5 D 6.25	SE 50-3	_____
"	65	Bl bur jgl rm & ha wg	D 5	"	_____
"	66	Iron II lamp slt bkn	W 12	SE 41-1S	_____
"	67	Scoria rubbing st w ha (like S.N. 1553)	H 4	SE 50-3	_____
"	68	Wh bur bowl rd no ha rgb bkn	D 24	"	I 63: 11; §117
5-12	69	1-ha jgl gr w bl vt bur slt bkn	H 12 D 6	"	III 26, B: 4
"	70	1-ha jgl rd srf ha & rm wg	H 11 D 6	"	_____
"	71	Hf whetst rd & white veined	L 9.25 W 3.5	"	_____

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
5-12	72	Wh bur bowl no ha inep	R 9	NW 3-4	I 64: 1; §117
"	73	Stp ha of 1-ha jg (like I, §121, No. 10)	—	—	I, p. 88, fig. 15: 10; §121
5-13	74	Bl bur jgl std fm	H 6.5 D 5	NW 13-4	—
"	75	Stpd ha of 1-ha jg rd bf	—	W Gate	I, p. 88, fig. 15: 9; §121
"	76	Ha lge jr w ined potter's mark	W ha 5 Th 1.7	NE deb	I, p. 88, fig. 15: 3; §121
5-14	77	1-ha jg rd br slp rm wg	H 10.5 W 7.5	SE 41-1S	I 37: 5; 66: 27; §114
"	78	Wh bur bowl bkn	R c. 18	SE 50-9	III 26, A: 8
"	79	Bf bur jgl int	H 6 D 5	SE 41-1S	—
5-15	80	Jg rd bur slp inep	H 18 D 15	NW 13-4	—
5-17	81	Bf jgl vt bur int	H 9.5 D 7	N of E Gate	III 26, B: 14
"	82	Elg 1-ha jgl gr bf int	H 14.5 D 6+	SE 50-1	III 26, B: 10
"	83	Elg 1-ha jgl bf bkn	H 12 D 6	SE 51-11	III 26, B: 12
"	84	Torso Astarte fig	H 6 W 7	SE 51-8E	II 25: 13; III 57, c: 7
"	85	Wh bur bowl bkn	R c. 9	SE 51-5N	I 64: 10; §117
"	86	Do	R 8.5	"	I 64: 8; §117
"	87	Do	R c. 12.5	"	I 63: 4; §117
"	88	Do	R 12.25	"	III 26, A: 4
"	89	Sm pointed amph w knob ba rd slp bkn rm	H 23.5 W 15.5	"	I 36: 9; 54: 7; §108
"	91	Stpd jg ha	—	SE 51-5N	Cf. I, p. 88, fig. 15: 10; §121
"	92	Stpd cp ha	—	SE 51-4	I, p. 88, fig. 15: 7; §121
5-18	93	Jr stand bf int	H 7.5 D 17.5	SE 51-11	I 36: 3; 71: 12; §120; III 57, d: 5
"	94	Rd bf jg no ha db int	H 17.5 D 14.5	"	I 37: 3; 70: 12; §120; III 57, d: 4
"	95	Iron II lamp bkn	—	SE 51-4	—
"	96	Do	—	"	—
5-19	97	Elg 1-ha jgl bf vt bur int	H 13 D 6.5-7	SE 51-11	—
"	98	Bf 1-ha jg bkn	H 15 D c. 10	"	I 37: 4; 57: 15; §111
"	99	Min amph bf w rd bds slt bkn	H 8 D 5.5	"	I 39: 14; p. 85, fig. 14: 17; §116
"	100	Sm pointed amph w knob ba bur slp bkn	Max D c. 16.5	SE 51-8W	—
"	101	St wt (hemispherical) int	H 3.4 D 4	SE 51-11	III, §44
"	102	Iron II lamp	12.5 x 12	"	I 34: 11; §119
"	103	Sm bowl unbur db slt bkn	D rm 13.5	"	—
"	104	Sm wh bur bowl inep	D rm 11.3	"	I 64: 12; §117

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
5-19	105	Sm wh bur bowl bkn	D rm 14.5	SE 51-11	I 64: 15; §117
"	106	Iron II lamp slt bkn	L 13	"	_____
"	107	Wh bur bowl bf bkn	D rm 18	"	I 64: 6; §117
"	108	Sm bf bowl unbur int	D rm 14	"	I 67: 17; §117
"	109	Sm wh bur bowl rd int	D rm 15	"	I 64: 11; §117
"	110	Wh bur bowl rd bkn	R c. 13	SE 51-5N	I 63: 9; §117
"	111	Wh bur bowl bf 1-ha found bkn	D 31	SE 51-11	III 26, A: 1
"	112	Wh bur bowl rd bkn	D 30	"	I 63: 1; §117
"	113	Sm wh bur bowl rd bkn	D 16	"	I 64: 20; §117
"	114	Do	R c. 9	"	I 64: 5; §117
"	115	Bowl unbur pntd bds out- side rm, bkn	D 22.5	"	III 26, A: 7
"	116	Sm wh bur bowl db rm wg	_____	"	_____
"	117	Wh bur bowl lt bf int	D 22	"	III 26, A: 6
"	118	Bf bur jgl int	H 6	"	_____
"	120	Wh bur bowl 4-ha bkn	D 31	"	_____
5-20	121	1-ha jg rd bf pt rm wg	H 17 D 12.5	"	I 38: 13; 57: 13; §111
"	122	Tripod lava mortar for grinding <i>kohl</i> (?)	H 17 D 21	SE 51-5N	III 30: 6; 64: 12; §54
"	123	Sm pointed amph rd bf tp wg	Max D c. 17.5	"	_____
"	124	1-ha ptr gr bf w vt bur bkn	D c. 13	N of E Gate	I 38: 15; III 26, B: 16
"	125	Elg 1-ha jgl bf slt bkn	H 12.5 D 6.5	SE 51-11	III 26, B: 9
"	126	Do w vt bur bkn	H 12.5 D 7	SE 51-2	_____
"	127	1-ha jg hf filled w charred wheat, bf pt rm wg	H 13.5 rm 0	"	I 38: 21; 57: 16; §111
"	128	Sm amph dk gr vt bur above ha ho bur below ha slt bkn	H 26.5 Max W 20	SE 41-3/4	I 36: 7; 54: 5; §108
"	129	Bl bur jgl stnd fm	H 7 D 5	"	_____
"	130	Do	H 6.5 D 5	"	_____
"	131	Bf bur jgl without lip	_____	?	_____
"	132	Wh bur bowl bf bkn	D 19	SE 51-11	I 64: 4; §117
"	133	Wh bur sau rd int	R 7.5	"	I 64: 13; §117
"	134	Wh bur bowl rd int	D c. 13	"	I 64: 18; §117
5-21	137	Elg 1-ha jgl rd bf vt bur slt bkn	H 13 D 6.5	"	III 26, B: 1
"	138	Elg 1-ha jgl br bf slt bkn	H 13 D 7	"	III 26, B: 5
"	139	Min amph int srf damaged	H 8 D 5	"	I 39: 18; p. 85, fig. 14: 16; §116
"	140	Min amph plain srf tp wg	D 6.5	SE 51-5N	_____
"	141	Jg rgb badly bkn	H 16 D 14	"	_____

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
5-22	142	Wt polished quartz slt bkn 259 g (est min shortage 6-10 g)	H 4.8 D 6	W Gate	_____
"	143	Elg 1-ha jgl gr smkd w vt bur (9 strainer holes in bt)	H 12 D 6.5	SE 51-11	III 26, B: 8
"	144	Elg 1-ha jgl rd br vt bur bkn	D 6	"	_____
"	145	Hm jr epl	H 35 D rm 19	W Tower	_____
"	146	Hm jr incpl	_____	"	_____
5-24	147	Polished spheroidal lime- st wt int wt 4.565 g	H 12 D 15.6	"	III 57, d: 1
"	148	Wh bur pl w fl grooved rm slt bkn	D 21	SE 41-6	I 64: 2; §117
"	149	Rd bf jgl int	H 9 D 6.5	SE 51-7	I 39: 19; 66: 12; §§112, 115
"	151	Sm bf jg w vt bur int	H 13 D 8.5	"	III 26, B: 7
"	152	Elg 1-ha jgl gr bf int	H 11 D 6.5	SE 41-6	_____
"	153	Wh bur bowl rd bkn	H 8.5 D 23	SE 51-9	I 63: 6; §117
"	154	Wh bur bowl br rd epl	H 9.5 D 25	SE 41-6	I 63: 5; §117
"	155	Wh bur bowl bf bkn	D 21	SE 51-9	I 63: 8; §117
"	156	Jgl ha bkn	H 9.5 D 6.5	SE 51-7	_____
"	157	1-ha jg br bf bkn	H 15 D 12.5	SE 41-6	I 38, 12
"	158	Wh bur bowl rd bkn	H 8.5 D 23	SE 51-9	I 63: 10; §117
"	159	Spheroidal limest wt (ham- mer dressed) 12,628 g	H 17.5 D 21.6	W Tower	III 57, d: 2; §44
5-26	160	Jgl rd & bl bur tp bkn	D 7	SE 51-10	_____
"	161	Bl bur jgl ha bkn	H 7 D 4.5	W Tower	_____
"	162	Bf bur jgl ha bkn	H 9 D 6.5	SE 50-5	_____
"	163	Elg 1-ha bf jgl ha wg	H 13 D 7	W Tower	_____
"	164	Bf jgl w vt bur int	H 8.5 D 6	SE 50-5	_____
"	165	Min amph bf w dk bds incr tp bkn	H 9 D 5.5	"	I p. 85, fig. 14: 19; §116
"	166	Sm rd jg vt bur tp wg	D 7	SE 51-11	_____
"	167	Sau w strt side & env bt rd br bkn	H 4.5 D 14	W Gate	_____
"	168	Do	H 5 D 13.5	SE 50-5	I 64: 17; §117
"	170	Wh bur bowl dk gr epl	H 9.5 D 26	SE 41-6	I 63: 2; §117
"	171	Wh bur sau rd db bkn	R 9.5 H 5.25	W Tower	I 64: 7; §117
"	172	Wh bur bowl rd epl	H 6 D 20.5	SE 41-6	I 64: 3; §117
"	173	Wh bur sau bkn	H 5 D 13.3	SE 50-5	I 64: 19; §117
"	174	Rbd ha w bkn iron arrow- hd adhering	Arrowhd 7 x 2	W Gate	_____
5-27	175	Sm pot w 4 ha rm grooved for lid, incr int	H 8 D 15	SE 50-5	I 37: 19; 54: 4; §106
"	176	Iron II lamp	9.5 x 9.5	?	I 70: 3; §119

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
5-27	177	Elg 1-ha jgl br bf vt bur bkn	H 11.5 D 6	SE 50-5	III 26, B: 13
"	178	Wh bur bowl br rd bkn	H 9 D 24	"	I 63: 3; §117
"	179	Bf jgl unbur int	H 6.5 D 5	"	_____
"	180	Wh bur bowl bkn	H 5.5 R 7.5	"	_____
5-29	182	Sau rd br int	H 3.5 D 12	SE 51-8E	I 65: 12; §117
no date	183	Philistine bowl bkn	D c. 20	E Cave	I 49: 2; §§63 f.
"	184	Philistine crater bkn	D rm 29	"	I 49: 5; §82
4-29	192	Wh bur bowl 4-ha rgb	H 19 D rm 40	NW 13-9	_____
5-17	193	Hd Astarte fig	H 6 W 4	SE 51-5N	II 25: 8; III 57, c: 1
"	194	Haematite wt, burned & slt bkn	H 3 D 5.0	A level	III 63: 24
"	196	Bone whorl	H 0.9 D 2.5	"	III 32: 22
4-4	201	Iron II lamp int	12.25 x 13.25	S of E Gate	I 34: 10; §119
"	202	Sm pointed rd amph	12.0 x 9.0	"	I 36: 6; 53: 8; §108
"	203	Sm wh bur bowl bf no ha bkn	_____	"	_____
"	204	Jgl inepI	D 7	"	_____
"	205	Wh bur bowl bf w bur rd bds no ha epl	D 19.5	"	_____
"	206	Wh bur bowl bf no ha inepI	_____	"	_____
"	207	Br jgl bkn	_____	"	_____
"	208	Wh bur bowl rd bf no ha bkn	_____	"	_____
"	209	Wh bur bowl rd bf ■ ha bkn	_____	"	_____
"	210	Do	_____	"	I 65: 2; §§112, 117
"	211	Wh bur bowl dk bf no ha bkn	D c. 24	"	_____
"	212	1-ha jgl dk br bkn	_____	"	_____
"	213	Sm pot no ha bkn	W 10	"	I 67: 21; §118
4-5	214	Rattle punctured at ends, with pebbles inside int	L 8	W of E Gate	III 32: 11; 57, b: 5
"	215	Iron II lamp int	12 x 12	S of E Gate	_____
"	216	Wh bur shallow bowl bf inepl	D 18.5	W of E Gate	_____
"	217	1-ha jug lt gr bkn	H 16.5 D 13	"	_____
"	218	Wh bur bowl bf db bkn	D ba 8	S of E Gate	_____
lost	219	Lge wh bur bowl rd rgb bkn	_____	"	_____
"	220	Sm sau wh bur hf wg	R c. 7	"	_____
4-5	221	Wh bur bowl no ha rgb bkn	D ba 8.5	"	_____
"	22	Cp rd bf smkd 2-ha inepI	_____	"	I 35: 3; 55: 5; §109

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
4-5	223	Sm wh bur bowl enc ba bkn	Max inside D 15	S of E Gate	I 67: 18; §117
"	224	2-ha jr rd bf int	H 19 D 18	"	I 35: 8; 55: 11; §109
"	225	Lge bf 1-ha jg w ho wh bur slt bkn	D 18	"	_____
"	226	Jgl gr bf int	10 x 6	"	_____
"	227	Cyl vs bf w thick wall rm slt bkn	H 15 D 6	"	_____
"	228	Elg 1-ha jg bf vt bur smkd bkn	H 18 D 9	"	_____
"	229	Elg 1-ha jgl vt bur int	H 12.5 D 7	"	_____
"	230	Bur jgl gr bf stnd fm mo wg	D 6.5	"	_____
"	231	Jgl dk gr slt bkn	H 10 D 8	"	_____
"	232	Bf bur jgl (like 230)	H 7 D 5.5	"	_____
"	233	Lge wh bur bowl bf 4-ha rgb bkn	_____	"	_____
"	234	Wh bur bowl inepI	_____	"	I 66: 10; §§112, 117
"	235	No-ha jr fl bt ho wh bur slt rbd rm bkn	H 12.5+ D 9	W of E Gate	_____
"	236	Iron II lamp rm slt bkn	D 12.5	"	_____
"	237	Elg 1-ha jgl unbur bkn	D 8	"	_____
"	238	Sm 2-ha cp rd bf bkn	_____	"	_____
"	239	Elg 1-ha jgl dk gr int	H 13 D 6.5	S of E Gate	_____
"	240	Elg 1-ha jgl bf (like 239) ha wg	14 x 7	"	_____
"	241	Jgl bf bur slt bkn	H 12.5 D 9	"	_____
"	242	Ps from rd bf amph (?) w double-axe incd before baking	10.5 x 9 7 mm thick	"	I, p. 88, fig. 15: 2; §121
"	243	Iron II lamp slt bkn	D 14	"	_____
"	244	Do	D 12.5	"	_____
"	245	Do	_____	"	_____
"	246	1-ha ptr w cream slp vt bur pt rm bkn	H 14.5 D 8	SE 32-5	I 37: 8; §111
"	247	Lge jr no ha	H 51 D 38	SE 32-2	_____
"	248	Hm jr int	H 35 D 21	"	I 33: 3; 52: 5; §103
"	249	Do	H 35 D 17	"	I 33: 2; 52: 7; §103
"	250	Do nearly cpl	H 28 D 20	SE 32-3	I 52: 6; §103
"	251	Do tp wg (very thin walled)	D 20	"	_____
"	252	Diorite pivot of potter's wheel (?)	D 18	SE 32-5	_____

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
4-6	253	Sau bl gritty slt enc ba bkn	D 15	SE 32-3	_____
"	254	Sm bowl bl bur bkn	D c. 12.5	"	_____
"	255	Iron II lamp bkn	D c. 12	"	_____
"	256	Bl unbur bowl of wh bur type rgb bkn	_____	"	_____
"	257	Jgl of bl bur type iner bkn	D 6	SE 32-3	_____
"	259	1-ha jg bf pt tp wg	H 19.5 D 12.5	SE 33-10	I 37: 15; 59: 8; §§111 f.
"	260	Wh bur bowl rd inep1	H 10 D 27	"	I 61: 17; §117
"	261	Iron II lamp bkn	D 12.5	"	_____
"	262	Sm 1-ha jgl (like 239) bkn	H 12 D 6.5	"	_____
"	263	Min amph fl bt bkn rm	H c. 8 D 5	"	_____
"	265	Tp lge 3-ha jr w false spt	D rm 12	"	_____
"	267	Elg 1-ha jgl dk gr (like 239) tp bkn	H 13 D 6.5	SE 32-5	_____
"	268	Perf st spindle whorl (?)	Th 2.3 D 3.1	SE 33-10	III 32: 12; §52
"	269	Wh bur bowl rd inep1	_____	SE 32-5	I 66: 8; §§112, 117
"	270	Iron II lamp bkn	D 12	SE 33-10	_____
"	271	Wh bur bowl db no ha bkn	R 9	"	_____
"	272	Wh bur bowl rgb no ha bkn	R c. 15	"	_____
"	273	Sm 3-ha jr w false spt	H 13 D 12 D rm 8	"	I 34: 4; 54: 3; §106
"	274	Bl bur jgl stnd fm	H 6 D 5	"	_____
"	276	Sm diorite wt (?) or rub- bing st	2.7 x 4	SE 32-3	III 63: 23
4-7	277	Elg 1-ha jgl gr bf (like 239) int	H 13 D 7	SE 33-10	_____
"	278	Do bkn	D 7.5	"	_____
"	279	Do bkn	H 13 D 7	"	_____
"	280	Bl bur jgl bkn	H 6.5 D 5	"	_____
"	281	Squat jgl rd bur ha wg	H 10.5 D 7.5	"	_____
"	282	1-ha bf jg w globular bo	H 11.5 D 11.5	"	_____
"	283	Do	H 11.5 D 11	"	I 37: 9; 57: 17; §111 f.
"	284	Iron II lamp inep1	_____	E of SE 32-2/3	_____
"	285	1-ha jg fl bt tp wg	D 9.5	"	_____
"	286	Sm bowl db no ha	D c. 15	"	_____
"	287	1-ha jg bkn	D c. 14	"	_____
"	288	Do	D 14	"	_____
"	289	Lge 2-ha jr bkn	D c. 21.5	SE 32-3	I 35: 7; 56: 16; §110
"	290	Wh bur bowl 4-ha rgb dk gr bkn	_____	SE 33-10	_____

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
4-7	291	2-ha cp w <i>taw</i> on ha & bd of 2 incd lines around bo bkn	D rm ■	SE 33-10	_____
"	292	Tripod mortar bkn in 4 pes	H 14 D top 26	SE 32-3	_____
4-9	293	Elg 1-ha jgl bf vt bur slt bkn	H 14 D 7.5	SE 32-1	_____
"	294	1-ha jgl bf vt bur int	H 11 D 6.25	"	_____
"	295	Do	H 12.5 D 7.25	SE 32-7	_____
"	296	Elg jgl (like 293) rm bkn	H 14 D 7.5	SE 33-14	_____
"	297	1-ha jgl slt bkn	H 10.75 D 6	SE 43-1	_____
"	298	Do	H 10.5 D 6	SE 32-1	_____
"	299	1-ha jgl bf int	H 10 D 7	SE 33-14	_____
"	300	Do bur int	H 10.5 D 7.5	"	_____
"	301	Elg 1-ha jgl bkn	H 13 D 7.5	"	_____
"	302	Sm jgl 1-ha bur int	H 6 D 4.5	SE 32-5	_____
"	303	Sm jr no ha vt bur int	H 7 D 6.25	SE 33-14	I 67: 29; §118
"	304	Jgl (like 293) tp wg	H 14+ D 7.5	SE 32-1	_____
"	305	Jgl 1-ha bf int	H 10.5 D 7	"	_____
"	306	Jgl 1-ha bf vt bur inep l	H 9.25 D 5.5	"	_____
"	307	Sm pot fl bt bf int	H 6.5 D 8.25	SE 33-6	_____
"	308	Amph bf w knob ba tp bkn	H 17.5+ D c. 11	SE 33-14	I 54: 8; §108
"	309	Lamp like 201 bkn	c. 13 x c. 13	SE 33-7	_____
"	310	Lamp like 201 inep l	D c. 12.5	"	_____
"	311	Wh bur bowl bf rgb (like 260) bkn	H c. 8 D c. 25	SE 33-14	_____
"	312	Sm 1-ha jg bf int	H 10.5 D 11.5	"	_____
"	313	Do rd br int	H 9 D 9	"	I 38: 8
"	314	1-ha jgl rd bf rm bkn	H 11.5 D 9.5	SE 32-7	_____
"	316	Wh bur bowl smkd db bkn	D 18	SE 33-14	_____
"	317	Wh bur bowl bf db bkn	D 25.5	SE 32-1	_____
"	318	Elg 1-ha jgl vt bur rm bkn	H 10.5 D 6	SE 43-1	_____
"	319	Iron II lamp bkn	D c. 12	SE 33-14	I 70: 5; §119
"	321	Wh bur bowl bf rgb no ha bkn	R c. 12	SE 32-6	_____
"	322	Do	D 24	"	_____
"	323	Heavy bowl bf epl	H 11 D 34	"	I 65: 29; §117
4-10	324	1-ha jg bf rm bkn	H 18.5 D 13.5	SE 32-7	I 38: 14
"	325	Elg 1-ha jgl vt bur (like 293) bkn	D 7.5	SE 33-8	_____
"	326	Squat 1-ha jg w animal- hd spt slt bkn	H 10 D 9.25	"	I 37: 20; 71: 3; §120
"	327	Min amph bf w bd orange pnt int	H 10.75 D 5.75	SE 33-11	I 39: 13 ; 66: 20; §116
"	328	Elg 1-ha jgl vt bur (like 293) int	H 12.25 D 7	SE 32-7	_____
"	329	Iron II lamp bkn	D 13	SE 33-12	_____

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
4-10	330	Do	D 12.5	SE 22-2	_____
"	331	Do	D 13	SE 33-12	_____
"	332	Do	_____	"	_____
"	333	Wh bur bowl no ha rgb epl	R c. 11	"	_____
"	334	Lge jrstand epl.	H 14.5 max D 21	SE 33-11	I 36: 4; 71: 13; §120
"	335	2-ha ep slt bkn	H 18 D 17.25	SE 22-3	I 35: 2; 55: 7; §109
"	336	Lge st tray bkn	H 4 D 27.5	SE 32-7	_____
"	337	Wh bur bowl 2-ha rgb bkn	H 10 D 26	SE 33-12	_____
"	338	Wh bur bowl no ha rgb bkn	H 9 D 23	"	_____
4-11	339	Wh bur bowl no ha rgb bkn	R c. 13	"	_____
"	340	Sm wh bur bowl bkn	D 14	SE 23-1	_____
"	341	Sm wh bur bowl db bkn	D 12	"	_____
"	342	Bf jgl (like bl bur jgl) int	H 7.5 D 4.5	"	_____
"	343	Iron I lamp bkn	D 12	"	_____
"	344	Do	"	SE 33-12	_____
"	345	Wh bur bowl no ha db gr br bkn	H 5.5 D 17.5	"	_____
"	346	Elg 1-ha jgl bf (like 293) bkn	H 14 D 7.5	SE 22-4	_____
"	347	Elg 1-ha jgl rd bf vt bur bkn	D 7	"	_____
"	348	Sm 1-ha jg (like 312) bkn	H 9.5 D rm 7.5	"	I 38: 9
"	349	2-ha jr rd br smkd bkn	D rm 9.5	"	_____
"	350	Lge 2-ha cp (like 335) rd br epl	D rm 17 H c. 20	SE 22-2	I 35: 4; 55: 2; §109
"	351	Iron II lamp bkn	D 13	SE 22-1	_____
4-12	352	1-ha jg db int	H 20.5 D 16	SE 23-2	I 38: 3
"	353	Sm pot stand	H 6 D rm 8.5	"	I 36: 5; 71: 9; §120
"	354	Unbur bowl of wh bur fm	H 9.25 D 23	SE 23-3	_____
"	355	Pot strainer, rm bkn	D 7.5	SE 23-4	_____
"	356	Elg 1-ha jgl bf vt bur (like 293) int	H 14 D 7.5	"	_____
"	357	Do bkn	H 13.5 D 7.25	SE 23-5	_____
"	358	Jr no ha gr br int	H 9 D 9.5	SE 23-4	I 37: 10; §112
"	359	Min amph bf unpntd int	H 10 D 6	SE 23-4	I 39: 15; 66: 18; §116
"	360	Elg 1-ha jgl slt bkn (like 356)	H 13.25 D 7.25	"	_____
"	361	Min 1-ha jg bf fl bt hand- made bkn	H c. 5 D 4.5	SE 23-2	_____
"	362	Wh bur sau bf bkn	D 15	SE 22-1	_____
"	363	Db of wh-bur bowl trimmed around edge to form lid	D 9	"	_____

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
4-12	364	Amph (like 308) rd bf bkn	H 17.5	SE 23-4	I 54: 9; §108
"	365	1-ha jgl bf rm bkn	H 7.25 D 4.25	SE 23-2	_____
"	366	Iron I lamp bkn	D 13	SE 22-4	_____
"	367	Do	D 12.5	SE 23-2	_____
"	368	2-ha cp w <i>taw</i> incd on 1-ha	H c. 18.5 D rm 9	SE 23-3	I 35: 10; 55: 6; §109
4-13	369	Glass bead srf damaged	D 1	SE 33-12	_____
"	370	Copper arrow-hd with tip bent back from impact	L 8	SE 23-4	III 63: 28
"	371	1-ha jg bf int	H 12.75 D 8.5	SE 23-5	_____
"	372	Unbur bowl of wh-bur type no ha slt bkn	D 20 H 6.5	"	_____
"	373	Wh bur bowl bkn	D 14 H 5	SE 23-3	_____
"	374	Bl bur jgl stnd fm	_____	SE 23-5	_____
"	375	1-ha jg bkn	H 16.5 D 13	"	I 38: 11
"	376	1-ha jgl vt bur int	H 14.25 D 7.5	"	_____
"	377	Do bkn	H 12.5 D 7.5	"	_____
"	378	2-ha cp int	H 13.5 D 13	"	I 35: 11; 55: 1; §109
"	379	1-ha spher jg rgb bkn	D 12.5	SE 23-4	_____
"	380	Tripod lava mortar bkn	H 11 D 27	SE 23-5	_____
"	381	Lge rd wh-bur bowl rgb 4 ha bkn	_____	"	_____
"	382	Sm 3-ha jr w false spt like 273	H 11 D 9	SE 23-4	I 34: 5; 54: 2; §106
"	383	Sm 1-ha jg bkn	H 10 D 10.5	"	_____
"	384	Iron II lamp bkn	D 13	SE 23-5	_____
"	385	Do	D 12.5	SE 23-4	_____
"	386	Do	_____	SE 23-5	_____
"	387	Do	_____	"	_____
"	388	2-ha cp cpl	H 18.5	"	I 35: 6; 55: 12; §109
4-14	389	1-ha dec wh-bur cpl	H 19.5 D 15	SE 23-8	I 59: 3; §111
4-13	390	Cp ha w stp	_____	"	I, p. 88, fig. 15: 6; §121
"	391	Tp of chalice rd bf bkn	D rm 23.5	SE 23-4	_____
"	392	2-ha cp w <i>taw</i> on ha (like 291)	_____	SE 24-2	I 55: 10; §109
"	393	1-ha bf jgl ha & rm bkn	D 6.5	"	_____
"	394	1-ha jg bf bkn (like 371)	H 15.5 D 11	"	_____
"	395	Do	H 17 D 15.5	SE 23-4	I 38: 19; 57: 12; §111
4-14	396	Wh bur sau fl ba bkn	D 13.5	SE 23-8	_____
"	397	Do	D c. 13	"	_____
"	398	Do db bkn	D 14.5	"	_____
"	399	Do	D c. 13	"	_____

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
4-14	400	Do	D c. 15	SE 23-8	_____
"	401	Do	D c. 15	"	_____
"	402	Jr rd bf int	H 12.75 D 9	SE 23-9	I 37: 11; 66: 13; §§112, 115
"	403	Fl inced ox-bone	L 17+ W 8+	SE 23-4	III 29: 15, 15a; 60: 12
"	404	Bl bur jgl int	H 6.5 D 4.5	SE 23-9	_____
"	405	Iron sickle 3 pcs cpl	L 27	SE 23-8	III 61: 8
"	406	Iron sickle 3 pcs from md	L 19+	"	_____
4-12	407	Hf sm wh bur bowl w 4 min ha	D 11	SE 23-2	_____
"	408	Ps from sh pi inced w double trident before baking	_____	"	_____
"	409	2-ha pi w same mk bkn	_____	"	_____
"	410	Lge wh bur bowl bkn	D 24	"	I 65: 1; §117
4-18	412	Elg 1-ha jgl rd bf (like 239) int	H 12.5 D 6.5	_____	_____
"	413	Sm 1-ha ptr w fl ba slt bkn	H 13 D 8	_____	_____
"	414	1-ha jg w rnd bt bur rd- bf slp bkn	H 11 D 10.5	_____	_____
"	415	1-ha jgl rd bf ha & nk wg	H 8.5 D 7.5	_____	_____
"	416	Min jgl bf w ho wh bur & bds rd pnt rm bkn	H 8.25 D 6.3	_____	I, p. 85, fig. 14: 18; §116
"	417	Iron chisel	L 14 Aver. D 2	_____	III 61: 11
"	418	Hf iron chisel	L 8.6+ Aver. D 2	_____	_____
4-19	419	Inced bone whistle w rnd hole in md 2 pcs	L 9 D 1.3-1.5	SE 33-13	III 32: 9
"	420	Inced cyl bone bkn at end	L 10 D 1.3-2.0	SE 23-4	_____
"	421	1-ha jg bf bkn	D 15	E Cave	I 37: 2; §111
4-20	423	1-ha jgl bf int	H 7.3 D 4.3	SE 23-1	_____
"	425	1-ha ptr inepl	_____	"	_____
"	426	Bone ear pendant int	L 5.7 D. 0.6-0.9	"	III 32: 15; §49
"	427	Bf bur jgl bkn	D 4.25	"	_____
4-21	428	Iron II lamp bkn	D 12.5	"	_____
"	429	Iron arrow-hd bkn	L 8 D 1.5	"	_____
"	430	1-ha jgl rd br w vt bur int (B ₃ or A ₁)	H 10.3 D 6.3	SE 42-1	I 51: 2; §94
"	431	Whetst	7.5 x 3.8	SE 23-1 deb	III 63: 22
"	433	Cp like 335 bkn	_____	SE 23-1	_____
"	435	Horse & rider fig (pot)	9.0 x 6.0 +	deb SE	III 32: 7; §50
"	436	Bkn copper bar	5.0 x 3.0+ Th 0.9	"	_____
"	437	Lge wh bur bowl bkn	_____	"	I 60: 1; §117
"	438	Sm jg no ha bkn	H 10.5 D do	"	_____
4-23	439	Tp of 4-sided limest house altar (B)	H 11 W 9 x 7-8	"	III 55: 13; §16

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
4-23	441	Bl bur jgl w db (B: cf. Megiddo I, Pl. 5: 129 f.)	H 6.5+ D 6.5	deb SE	—
"	443	Wh-bur rd bowl bkn	H 9.5 D 29.5	at peg SE 33 A	I 65: 25; §117
4-24	444	Iron II lamp int	D 12.5	deb SE A	I 70: 6; 34: 9; §119
"	445	Do	D 13.5	"	I 34: 6; §119
"	446	Elg 1-ha jgl w vt bur bkn	H 12 D 6.5	"	—
"	447	Animal vs	H 12 girth 8.75	"	I 71: 1; §120
"	449	Sm bowl bf unbur bkn	H 5.5 D c. 15	"	—
"	450	1-ha jg rd bf incpl (A ₂)	D rm 9.5	"	—
"	451	Spher. amethyst bead	H 5 mm D 6 mm	"	—
"	452	Hf spher. blue faience bead	D 11 mm	"	—
4-13	454	2-ha cp bkn	H 21 D rm 20	SE 23-5	I 35: 1; 55: 4; §109
"	455	Wh-bur sau bkn	H 4.5 D 15.5	"	—
"	456	1-ha jgl rm slt bkn	H 13.5 D 9	"	—
"	457	Elg 1-ha jgl w vt bur bkn	—	"	—
4-24	458	Do int	H 11.5 D 6.5	SE 23-10	—
"	459	Do slt bkn	H 12 D 6.5	"	—
"	460	Do cpl	H 14 D 8	"	—
"	461	Iron II lamp int	D 12.5	"	—
"	462	Do bkn	—	"	—
"	463	Do bkn	—	"	—
"	464	Sm squat jr no ha	H 5.6 D 6.7	"	—
"	465	Tp lge 2-ha vs white slp w knife finish	H 16+ W 13+	deb SE 21	I 37: 17; 71: 4; §120
"	466	Wh-bur bowl db no ha	—	SE 23-10	—
"	467	Do smaller	—	"	—
"	468	Iron tool w fl end bkn	14.4 x 6.2	"	III 61: 10
"	469	Up pt wh-bur dec 1-ha	Max D c. 18.5	"	I 59: 4; §111
"	470	Pot stand like 334 bkn	H 19 D rm c. 23	"	I 71: 8; §120
"	471	Do, smaller, bkn	H 11 D rm c. 19	"	I 36: 1; 71: 10; §120
"	472	Do, still smaller, bkn	H 8.5	"	I 71: 11; §120
"	473	Ps w incd letters bt	9 x 6	"	I, p. 77, fig. 12: 1; §101; III 60: 2
"	475	Dec of B type, bkn	D lp 4	deb SE-21	—
4-23	476	Philistine crater bkn	—	Silo 2, SE 32	I 50: 10; §82
4-25	477	Copper javelin hd cpl 2 pcs	19 x 2.5	Silo 3, SE	III 62: 10; §20
"	478	Iron II lamp w high ft slt bkn	D 13	SE 23-10	I 70: 8; §119
"	479	Do, bkn	—	"	—
"	480	Do, bkn	—	"	—
"	481	Wh-bur bowl db no ha bkn	D 17.5	"	—
"	482	Cp bkn	—	"	—

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
4-25	483	Iron II lamp smkd bkn	_____	deb SE-33	_____
"	484	Wh-bur sau cpl	H 4.5 D 14	SE 23-10	_____
"	485	Limest wt, abraded	H 3.6 D 4	"	_____
4-26	486	1-ha jg bkn	_____	Peg 32 SE	_____
"	487	Sm ptr cpl	D 9	SE 22-4	I 66: 26; 37: 6; §§111 f.
"	488	Sm 1-ha jg bur ha wg (early)	H 10.25 D 6	"	I 51: 3; §94
"	489	Pottery animal fig	H 7+ D 3.5	"	III 32:4; 57, b: 1
"	490	Wh-bur bowl, bkn	_____	"	_____
"	491	Do	_____	"	I 65: 20a; §117
4-27	494	St object like 268	H 2 D 3.3	SE 22-6	III 32: 13
"	495	Bone whorl (B)	D 2.5	Silo 6, SE	III 32: 19
"	496	St whorl, grooved on both sides (B)	D 2	"	III 32: 18
"	498	Faience grooved bead (B)	D 0.85	"	_____
"	499	Faience head (B)	D 1.0	"	_____
"	500	Jr fig w dove on breast, bkn (B)	6 x 6	"	II 28: 8; III 32: 17; §§13, 101
"	501	Fibula bkn (B)	L 7.5	"	III 32: 20
"	502	Copper javelin hd w tip bent slt bkn (B)	_____	Deb SE-32	_____
"	503	Lge wh-bur bowl, bkn	_____	SE 22-6	_____
"	504	Wh-bur bowl rgb bkn	H 8 D 24	"	_____
"	505	Sm bowl, unbur no ha int (B)	H 7 D 15.5	SE 33 B-3	_____
"	506	Do, bkn	H 6 D 15	"	_____
"	507	Do, bkn	H 8.5 D c. 20	"	_____
4-28	508	Elg 1-ha jgl rd bf vt bur int	H 14 D 7.3	Deb SE 20	_____
"	509	Do	H 14.5 D 7.5	"	_____
"	510	Do, incr bkn	D 7.25	"	_____
"	511	Wh-bur bowl no ha rgb incr slt bkn	H 6.5-7.5 D 23.5	SE 22A-6	_____
"	512	Sm sau rd bf int	H 2.5 D 8	Deb SE-20	I 65: 15; §117
"	513	Do w rm slt bkn	D 9.25	"	I 65: 17; §117
"	515	Iron II lamp bkn	D 13	"	I 34: 7; §119
"	516	Sm bowl, unbur bkn	H 5.5 D 14.75	SE 22A-6	_____
"	517	Iron II lamp, bkn	D 12.7	"	_____
"	518	Sm pointed amph bkn	_____	"	I 36: 8; 54: 10; §108
"	519	Limest cosmetic palette int	H 3 D 9.20	Deb SE 21	III 30: 1; 57, a: 5; §48
"	520	Do	H 2.6 D 8.90	"	III 30: 5; 57, a: 2
"	521	Do	H 2 D 7.5	SE 22A-6	III 30: 4; 57, a: 1

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4-28	522	Bone pendant	L 7	SE 22A-6	III 32: 16
"	523	Up pt Astarte fig	L 10+ W 8	"	II 25: 9; III 57, c: ■
4-30	524	Ps from 2-ha pi w ined pentagram	—	SE 21A-2	I, p. 88, fig. 15: 1; §121
"	525	Iron II lamp bkn	—	SE 31A-7	—
"	526	1-ha jg bkn	H 17 D 14.5	"	—
5-1	527	Astarte fig bt wg	H 14 W 8.5	SE 21A-1	II 25: 10; III 57, c: 3
"	528	Sm bowl bf db bkn (B)	H 7.5 D 14	SE 33 B-2	I 51: 14; §92
"	529	2-ha jgl bf pntd (like 416) int	H 10 D 6	SE 21 A-1	I 39: 16; 66: 19; §§112, 116
"	531	Lamp of B type bkn	D 14.5	SE 33 B-2	I 23: 2; §93
"	532	Wh-bur dec cpl	H 24 D c. 17	SE 21 A-1	I 37: 1; 59: 6; §111
"	533	Sm bowl bf bkn (B)	H 6.5 D 15.5	SE 33 B-2	I 51: 15; §92
"	534	1-ha jg rd bf bkn	—	SE 21 A-1	—
"	535	Do	H 19 D 14.5	"	—
"	536	Do	H 14.5 D c. 13.5	"	—
"	537	St whorl	2.3 x 4	"	III 63: 31
"	538	Iron arrowhd, tip bkn	L 6.5 W 1.6	"	III 63: 27
"	539	Copper tool w sq section 3 pcs (B)	L 6+3+2	SE 32-B	—
"	540	Sm st disc w pits at opp. points of axis	H 1.0 D 2	"	III 63: 25
5-2	543	Astarte fig w hd & arms wg	H 10+ W 3.5	SE 31 A-9	II 25: 11; III 57, c: 5
"	544	Sm conical pot object	H 3.5 W 3	Deb SE 22-A	III 32: 14; §53
"	546	1-ha jgl int	H 10.25 D 7.5	Deb SE 21-A	—
"	547	Sm wh-bur bowl, no ha	—	SE 32 A-8	—
"	548	1-ha jg w db bkn (B)	—	Silo 8, SE 32-B	—
"	549	1-ha jg w rgb slt bkn	H 24 D c. 20	"	—
"	550	Lge wh-bur bowl bkn	H 16 D c. 43	SE 22 A-4	—
"	551	1-ha jgl bkn	H 12 D 9.3	SE 31 A-9	—
"	552	1-ha jgl w vt bur inepi	H 12.75 D 6.75	SE 22 A-4	—
5-3	553	Astarte plaque bkn (B or C)	7 x 5	Deb SE 32 B	II 25: 6; 28: 6; III §12
"	554	Copper arrowhd (B)	L 7.5 W 1.6	Deb SE 32 B	III 62: 11
"	555	Iron arrowhd in 2 pcs	L 5.9 W 1.4	Deb SE 20 A	—
"	556	Copper ear-ring	D 2.0	SE 21 A-5	—
"	557	Spher. vs int	H 13 D 11	SE 21 A-4	I 37: 21; §120
"	558	1-ha jg rd slp bkn	H 12.5 D 8.5	SE 31 A-2	I 37: 16; §112
"	559	Jgl w 2 ho lug ha int	H 5.75 D 5	"	I 53: 11, §108
"	560	Lge 1-ha jg w rgb bkn	H 23.5 D 19	"	—
"	561	Iron II lamp bkn	D 13	SE 21 A-5	—

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5-3	562	Iron sickle in 2 pcs bkn	L 12.5 W 4	SE 21A-5	_____
"	563	Elg 1-ha jgl unbur (?) bkn	H 11.3 D 6.5	"	_____
"	564	Elg 1-ha jgl int (usual fm)	H 13.75 D 7	SE 31 A-2	_____
"	565	Wh-bur bowl no ha db slt inepl	H 7 D 20.5	SE 21 A-4	_____
"	566	Elg 1-ha jgl cpl	H 14.75 D 7.75	SE 31 A-2	_____
"	567	Wh-bur bowl no ha rgb (like 565) slt inepl	H 8.0-9.5 D 23	"	_____
"	568	Wh-bur bowl, no ha rgb incr bkn	H 9-10 D 25.5	SE 21 A-4	_____
4-28	569	Wh-bur sau db bkn	H c. 4 D 16	SE 22 A-6	_____
"	570	Do w enc ba	H 4.5 D 15.5	"	_____
"	571	Do w db bkn	D 15.5	"	_____
5-3	572	Animal fig (torso)	L 7+ W 4	Deb SE 21	_____
"	574	Wh-bur bowl w no ha rgb slt inepl	H 12.5 D c. 26	SE 31 A-9	_____
"	575	Oblong clay object, burned w circ. hole (flue?) length- wise (B) slt bkn	L 14.5+ max W 6.5	W of Silo 3, SE 32	_____
5-4	576	1-ha jgl bf bur (like bl- bur jgl) bkn	D 6.75	SE 31 A-2	_____
"	577	Sm wh-bur sau db bkn	H 5.5 D c. 14	SE 31 A-9	_____
"	578	Astarte plaque, torso (B or C)	L 7+ W 4.5	E Cave	II 25:7; 28:7; III §12
"	579	Royal jar stp on rd bf rbd ha	Stp 2.5 x 2	SE 31 A-2	_____
5-5	580	Royal jar stp on dk gr rbd ha	Stp 3.5 x 2.2	SE 31 A-3	III 29:8
"	581	Bone whistle int	L 9 W 1.8-1.4	SE 31 A-4	III 32:10
"	582	Clay fig of rider bkn	7+ x 5.5+	SE 31 A-7	III 32:5; §50
"	583	Rnd fl st wt or playing pc	1.7 x 0.8	SE 31 A-6	III 63:26
"	584	1-ha jg rd bf incr int	H 17 D 14	"	I 38:20
"	585	Sm 1-ha jg rd bf int	H 9.5 D 10.5	SE 21 A-4	I 38:5
"	586	Iron sickle bkn	_____	"	_____
"	587	1-ha jgl bf slt bkn	H 13.5 D 7	SE 31 A-4	_____
"	588	Sm wh-bur sau rd bf bkn	H 5 D 13.5	SE 21 A-4	_____
"	590	Elg 1-ha jgl bkn	H 12.5 D 6.5	"	_____
"	591	1-ha jgl bf like bl-bur type bkn	H 6.5 D 5	SE 31 A-3	_____
"	592	1-ha jg gr bf vt bur tp wg	H 16.5 D 16.5	SE 21 A-2	_____
"	593	Wh-bur bowl rd bf db no ha cpl	H 7.5 D rm 22.5	SE 21 A-4	_____
"	594	Bf sau w rd slp db bkn	H 6 D 19.5	SE 31 A-2	_____
"	595	Wh-bur sau w db rd bur bkn	_____	"	_____

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5-5	596	Do w cnv ba bkn	_____	SE 31A-2	_____
"	597	Wh-bur sau db bkn	_____	"	_____
"	598	Unbur rd bf sau db bkn	_____	"	_____
"	599	Do	_____	"	_____
"	600	Wh-bur bowl rgb slt inep1	_____	SE 21 A-4	I 66:7; §§112, 117
"	601	Sau w db rd slp bkn	_____	SE 31 A-2	_____
"	602	Do bkn	_____	"	_____
"	603	Do bkn	_____	"	_____
"	604	Wh-bur sau w cnv ba bkn	_____	SE 21 A-4	_____
"	605	Wh-bur sau w high sides fl ba bkn	_____	"	_____
"	606	Wh-bur sau db bkn	_____	SE 21 A-5	I 65:23; §117
"	607	Wh-bur sau w high sides db bkn	_____	SE 21 A-4	_____
"	608	Do	_____	"	_____
"	609	Do w cnv ba epl	H 5.5 D 12.5	"	_____
"	610	Sm bowl w rd slp db bkn	_____	SE 21 A-5	_____
"	611	Iron II lamp bkn	D 13	SE 31 A-2	_____
"	612	Do epl	D 12	SE 21 A-4	I 34:8; §119
"	613	Do, bkn	_____	"	_____
"	614	Do	_____	"	_____
"	615	Sm l-ha jg bkn	H 11 D rm 7.5	SE 21 A-5	I 38:7
"	616	l-ha jgl w thick bo bkn	_____	SE 21 A-4	_____
"	617	Iron sickle 2 pcs	L 17+ W 3.5	SE 21 A-5	_____
5-7	618	l-ha jgl vt bur ha wg	H 12 D 8	SE 21 A-2	_____
"	619	Lge wh-bur bowl rgb 2 ha bkn	D c. 34	"	I 66:1; §§112, 117
"	620	Iron sickle 2 pcs inep1 (B)	L 21 W 1-3.5	SE near 22 B-1	III 61:9
"	621	Do bkn (B)	L 12.5+ W 1.5-3.5	"	_____
"	622	Do bkn (B)	L 9+ W 1-2.5	"	_____
"	623	Stp on rbd amph ha	_____	E of SE 31-3	I, p. 78, fig. 13; §101; III 29: 6, 9; 60:8
"	625	Carnelian bead (B)	L 5mm	Deb near 22 B-1	_____
5-8	626	Lamp of Iron I type bkn (B)	D 14.5	Deb S of Silo 1	_____
"	627	Hand-bur bowl w knobs on rm (B)	H 7 D 23.5	E Cave	I 23:4; 51:13; §87
5-7	628	Copper arrowhd bkn (B)	L 5.7	Deb near 22 B-1	_____
5-8	629	Fl sau wh-bur rgb bkn (A)	D 15.5	SE 23 A-10	_____
"	630	Sm sau bf db bkn	D c. 15	S of Silo 5	_____

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5-8	633	Lge bowl lt bf (B)	H 23 D 33	NW of Silo 5	I 23: 5; 50: 8; §92
"	634	Hm jr slt bkn	H 27 D 14	SE 23 A-10	I 33: 1; 52: 8; §103
"	635	Do	H 27 D 15	"	_____
"	636	Lge 2-ha pi bkn (B)	_____	E of peg SE 33	_____
5-9	644	Bowl rd bur by wh & by hand, w rolled ho loop ha bkn (B)	_____	SE 32 B-1	_____
5-8	645	Lge unbur bowl bkn (B)	_____	Near peg SE 33	I 23: 6; §92
5-7	646	2-ha pi bkn	_____	SE 21 A-2	_____
5-5	647	Hm jr bkn	_____	SE 31 A-4	_____
5-10	650	1-ha jg rd bf slt bkn	H 19 D 13	Cist 1, SE 33-15	I 37: 14; §112
"	656	Toy lamp stnd rd bf int	H 8.5 D 5.5	"	III 32: 2; 57, b: 2
"	658	2-ha cp w ined <i>taw</i> on ha rd br int	H 18 D 17	"	I 35: 9; 55: 3; §109
"	659	Iron spear-hd 2 pcs tip wg	L 32.5 W 5	"	III 61: 7
5-11	660	Elg 1-ha jgl bf w vt bur (like 293) int	H 13 D 7.5	"	_____
"	661	Do, gr bkn	H 11.5 D 6.5	"	_____
"	662	Iron II lamp bkn	D 12	"	_____
"	663	Lamp w 7 spts db rm bkn (B)	H 6.5 D c. 12	SE 33 B-2	I 23: 3; §93
"	664	Sm 1-ha jgl rd br (like 226) slt bkn	H 9.5 D 6.25	Cist 1, SE 33-15	_____
"	665	Lge 1-ha jg gr bf bkn	H 22 D 19	"	I 38: 4
"	666	Sm jr rd br slt bkn	H 12 D 8.5	"	I 37: 7; 66: 11; §§112, 115
"	668	Ps ined w 3 letters	10.75 x 11.5	"	I, p. 77, fig. 12: 5; §101; III 60: 3
"	669	Toy: flying bird on stnd	H 11.5 W 8+	"	III 32: 3; 57, b: 3
"	670	Toy: woman carrying child	H 12 W 6.5	"	III 32: 1; 57, b: 4
"	672	Iron plow tip (Arab. <i>ṭāsah</i>)	L 22 W 5	"	III 61: 3
"	673	Iron plow pin (Arab. <i>jārâr</i>)	L 22 W 1.5	"	_____
"	674	Iron sickle 3 pcs	L 20 Aver W 4	"	_____
"	675	Iron sickle 4 pcs	L 20+ W 3.5	"	_____
"	676	End of sickle (?) bent tang & 1 rivet 2 pcs	L 9.5 W 2.7	"	_____
"	677	Iron plow tip 4 pcs	L 25 W c. 5	"	_____
"	678	Iron plow tip 2 pcs	L c. 24+	"	III 61: 1
"	679	Do (2 pcs ?)	L 22+ W c. 4.5	"	III 61: 4
"	680	Ox goad 2 pcs	L 17+ W 4	"	III 61: 5; §45
"	681	Do 1 pc	L 15 W c. 4.5	"	III 61: 2
"	682	Iron ring 4 pcs (nose- ring ?)	D c. 14 Th c. 1.5	"	_____

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5-11	683	Curved iron 3 pcs	span 19 Th 2.5	Cist 1, SE	_____
"	684	Axe-hd slt bkn	L 13 W 4.5	33-15	_____
"	685	Do bkn	L 15 W 5	"	_____
"	686	Iron rod 1 end bent & perf 3 pcs	L 25 Th c. 2.5	"	_____
"	687	Iron rod, 2 pcs	L 22 Th c. 2.5	"	_____
"	688	Iron hook or ring 2 pcs bkn	Span 6 Th 2	"	_____
"	689	St mason's hammer 2 pcs (?)	_____	_____	_____
5-12	695	1-ha jg rd bf int	H 22.25 D 17.5	Cist 1, SE 33-15	I 38: 1
"	697	Toy vs w 2 arms (?) & 2 rnd holes slt bkn	L 7 W c. 3.5	"	_____
"	698	Conical st, phps wt	H 4.2 D 3.5	"	III 63: 30
5-14	699	Elg 1-ha jgl w vt bur int	H 11.5 D 6.5	"	_____
"	703	St cosmetic palette	H 2.7 D 9.8	deb SE 22	III 30: 2; 57, a: 4
"	704	Do	H 2.1 D 8.1	"	III 30: 3; 57, a: 3
"	705	Sm amph w knob ba rd bf w pntd bd slt bkn	H 23 D 12.7	Cist 1, SE 33-15	I 36: 10; 54: 6; §108
"	706	1-ha ptr lt gr to bf, white slp cnv bt bkn	H 16.5 D 14.5	"	_____
"	708	Elg 1-ha jgl bf w vt bur (like 293) int	H 13.5 D 7	"	_____
"	709	Do slt bkn	H 14.25 D 7.5	"	_____
"	710	Do	H 13.5 D 7	"	_____
"	711	1-ha jgl rd-bf fl ba rm bkn	H 11.5+ D 8.5	"	_____
"	712	1-ha jg bf slt inepl	H 15.5 D 14.5	"	I 38: 18; 57: 14; §111
5-22	743	1-ha jgl w pointed bt (unique fm)	H 10.7 D 5.5	SE 23 A-9	_____
5-25	777	Elg 1-ha jgl int	_____	NW 11-2	_____
"	778	Do slt bkn	_____	NW 11-3	_____
"	779	Pot stdn bkn	_____	NW 11-2	I 36: 2; 71: 7; §120
"	780	Min 2-ha jgl w db bur tp bkn	_____	"	_____
5-26	804	1-ha jg w unbur rd srf rgb bkn	D rm 9	NW 11-1	I 59: 10; §111
"	805	Sm 1-ha jg rd unbur slt bkn	H 9.5 D 10.5	"	I 38: 6
"	806	Sm 1-ha jg (like 975) smkd int	H 9 D 8 D rm 5	"	_____
"	807	Elg 1-ha jgl vt bur int	H 12.5 D 6.5	NW 11-2	_____
"	808	Bl bur jgl int	H 6 D 5.5	NW 11-4	_____
"	809	Wh-bur bowl, no ha rgb bf cpl	H 8 D 23 D ba 7.5	NW 11-1	_____

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5-26	811	St whorl (B?)	D 2.7 H 0.5	NW 12-3	III 32: 21
"	813	Iron sickle bkn (A)	L 13+	NW 20 deb A	_____
"	814	Elg 1-ha jgl bf bkn	_____	NW 11-1	_____
"	815	Wh-bur bowl no ha rgb bf bkn	H c. 11.5 D c. 28	"	I 66: 9; §§112, 117
"	816	Lge wh-bur bowl 4 ha rgb bkn	_____	"	_____
5-27	817	Sm 2-ha-(?) cp dk rd-br tp wg	D 10	NW 12-1	_____
"	818	Bkn animal fig w detach- able (?) hd	L 6.5+ H 5+	NW 11-1	III 32: 6
"	819	Lge wh-bur bowl w rgb & 4(?) ha smkd bf bkn	_____	NW 12-1	_____
"	820	Wh-bur sau w fl ba br bf bkn	H 4 D 12.5	NW 12-4	_____
"	821	Elg 1-ha jgl bf bkn	L 12 D 6	NW 12-1	_____
"	822	Sm 2-ha(?) cp (like 817) tp wg	D 11.5	"	I 38: 10
"	823	Do	_____	"	_____
"	824	Do w 2-ha preserved	D 10.5	"	_____
5-12	825	Lge 1-ha jg rgb tp bkn	D 19	Cist 1, SE 33-15	_____
"	826	Do pinched lip rd bf bt wg	D 19	"	I 38: 2
"	827	Do w db bkn	D 24	"	I 56: 15; §110
"	828	1-ha jg bf w vt bur tp wg	D c. 13	_____	I 38: 16; §111
"	829	Do db bkn	H 24 D 20.5	Cist 1, SE 33-15	_____
5-14	830	Wh-bur bowl no ha rgb rd-bf bkn	D c. 21.5	"	_____
"	831	Lge lentoid flask wh-bur bf bkn	_____	"	I 71: 6; §120
"	832	Iron spear hd, 2 pcs	L 30	"	III 61: 6
6-24	849	Copper needle int	L 11.5 Th 0.3, eye 0.35 from end	NW deb	III 63: 40
"	850	Wh-bur dec w vt bur on sh, rgb bkn	H 18.6 D 16 D ba 8.3	SE 13 A-2	_____
"	851	1-ha jg rd bf pinched lp int	H 25.8 D 18	"	I 58: 9; §111
"	853	1-ha jg gr bf rgb slt bkn	H 24.8 D 20 D ba 8	"	_____
"	854	Elg jgl incr tp bkn	H 14.6 D 6.7	NW 20	_____
"	855	Elg jgl bkn	H 11.7 D 6.8	"	_____
6-25	857	Sm copper ring of wire w ends brought together	D 1.5 Th 0.2	"	III 63: 41
"	858	Copper spike	L 8.8 D hd 0.9	SE 13 A-4	III 61: 18
"	859	2-ha cp br bf int	H 24.3 D 21.3	SE 13 A-2 Cist 1	I 56: 17; §110

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6-26	860	Stp on rbd amph ha (like 623)	————	SE 23 A-7	I 40: 5; §107
"	861	St cosmetic palette	H 2.6 D 7.5	SE 13 A-4	III 27, B: 6
"	862	Do	H 2.8 D 8.3	SE 23 A-9	III 27, B: 4
"	864	Spheroidal wt fl tp & ba int	H 5.5 D 7	SE 13 A-4	III 63: 15
"	865	St object int	H 7.4 D 4.9	SE deb	III 62: 9; §55
"	866	Lge limest stopper cyl w fl proj. tp int	H 8.2 D tp 9.5 D end 6.3	NW 11-7	————
"	867	Royal stp on br bf rbd ha	Stp 3.2 x 1.8	SE 23 A-7	I 40: 4; §§101, 107; III 29: 10
"	868	Bowl rgb incr bkn	H 8.6 D ba 8.2	SE 22 A-5	I 61: 12; §117
6-27	869	Blue paste scarab	L 1.1 D 0.85	SE deb A	III 29: 13
6-26	870	Bl bur jgl int	H 5.5 D 4.6	NW 21-13	I 68: 16; §§112 f.
"	871	l-ha jgl incr int	H 11 D 8.3	SE 23 A-9	I 69: 16; §§112, 114
6-27	873	3 ps w 3 letters incd	————	SE 23 A-7	I, p. 77, fig. 12: 2; §101; III 60: 5
"	874	Bird jg w-br rd & lt blue pnt slt bkn	H 12.8 D 11	SE deb A	III 29: 14
"	875	Iron II lamp slt bkn	12 x 11.2	NW 11	I 70: 4; §119
"	876	Iron II lamp bkn	11.4 x 12.7	SE deb A	————
"	877	l-ha bur jgl br rd int	H 7.3 D 5.6	SE 22 A-9	I 68: 13; §§112 f.
"	878	l-ha bur jgl bf incr slt bkn	D 5.5	NW A	I 68: 14; §§112 f.
"	879	Copper hair-pin (?) still cov. w gold leaf near hooked end	L 8.6 Th 0.5	SE deb	————
"	880	Iron knife w lime incr	L 11.8 W 2.5	SE deb A	————
"	881	Hd Astarte fig	8.4 x 4.2	SE deb	III 31: 1; 54: 6
"	882	Wh-bur bowl ft bt bkn	H 6 D 14.3	SE 23 A-9	I 67: 6; §117
"	883	Scoria rubbing st (type of III §55)	6.1 x 8.7	NW 11	————
6-28	884	Iron II lamp bkn	12.8 x 12.8	SE 24 A	I 70: 2; §119
"	886	Elg jgl bf slt bkn	H 14.2 D 7	SE 23 A-7	————
6-27	889	l-ha jgl bf incr int	H 11.8 D 8.3	SE deb A	I 69: 17; §§112, 114
6-28	890	Dove fig bkn	H 7.6 W 5.6	"	III 58: 4
6-26	892	Wh-bur pl rd bf bkn	————	NW 11-7	I 65: 28; §117
6-28	893	l-ha jg lt br bf incr int	H 13.4 D 9.8	SE 13 A-18	I 57: 7; §111
6-26	894	Wh-bur bowl br rd bkn	————	NW 11-7	I 65: 3; §117
"	895	Wh-bur bowl rd bf bkn	————	NW 21-13	I 62: 12; §117
"	896	Wh-bur bowl bkn	H 5.5 D 14	NW 21-6	I 67: 1; §117
"	897	Elg l-ha jgl bkn	D 7.6	SE 23 A-11	I 68: 47; §§112 f.
"	898	Wh-bur bowl db bkn	H 8.3 D 21.6 D ba 6.75	NW 21-5	————
6-28	899	Lge amph w knob ba slt bkn	D 55.5 H 49.8	SE 13-2	I 53: 2; §104

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
6-30	902	Elg 1-ha jgl bf vt bur int	H 12.9 D 6.5	SE 13 A-13	_____
"	903	Do dk br bf int	H 12.3 D 6.4	SE 23 A-12	_____
"	904	1-ha jg int	H 10.4 D 7.9	SE 13 A-6	I 66:22; §§112, 114
"	905	Do bkn	H 11.5 D 8.3	"	I 66:21; §§112, 114
"	906	Elg 1-ha jgl slt bkn	H 12.2 D 6.8	SE 12 A-1	_____
"	908	Hd Astarte fig w traces of rd bur slp	H 6.4	SE 22 A-5	III 31:15; 54:4
"	909	Do	H 4.8 W 4.8	SE 12 A-5	III 31:13; 54:1
"	910	Elg 1-ha jgl w vt bur tp bkn	H 10.2 D 5.8	SE deb A	_____
"	911	1-ha jgl bf ha bkn	H 10.1 D 7.5	SE 13 A-6	I 69:12; §§112, 114
"	912	1-ha jgl fl bt bf tp bkn	H 10.5 D 10	SE 13 A-5	_____
"	913	1-ha jg w side spt	H 15.1 D 9.2	SE 13 A-6	I 70:13; §120
"	914	Sm jr bf tp bkn	H 10.2 D 7.6	"	I 66:16; §§112, 115
"	915	Pointed amph w knob ba wh & vt bur	H 26.4 D 13.2	SE 13 A-13	I 53:12; §108
6-25	916	Wh-bur bowl bkn	H 8.5 D 23.7	NW 21-13	I 61:11; §117
6-30	917	Bl bur jgl ha bkn	H 6.1 D 4.7	SE 22 A-5	I 68:12; §§112f.
7-1	921	Elg 1-ha bur jgl int	H 16.8 D 7.7	SE 13 A-6	_____
"	922	Do bf	H 13.3 D 7.4	SE 14 A-2	_____
"	923	Do bf	H 12.4 D 6.5	SE 13 A-6	_____
"	924	Do slt bkn	H 13.7 D 7.2	"	_____
"	925	Do dk gr slt bkn	H 10.7 D 4.8	"	_____
"	926	Do br bf int	H 12.6 D 6.7	SE 23 A-12	I 68:33; §§112 f.
"	927	Do bf int	H 13.7 D 7.5	"	_____
"	928	Sm bowl bf iner int	H 5.7 D 8.9	SE 13 A-6	I 67:23; §118
"	929a	Elg 1-ha jgl br bf w vt bur slt bkn.	H 15.1 D 7.2	"	_____
"	929b	Sm 1-ha ptr dk gr vt bur tp bkn	H 14.6 D 8	"	I 66:25; §§112, 114
"	930	Bl bur jgl tp bkn	H 4.9 D 4.6	"	_____
"	931	1-ha jgl br bf vt bur int	H 9 D 6.6	SE 23 A-12	I 69:11; §§112, 114
"	932	Do bf int	H 9.6 D 6.9	"	I 69:14; §§112, 114
"	933	1-ha jgl bf int	H 9.3 D 6.6	SE 14 A-2	I 69:13; §§112, 114
"	934	Do iner slt bkn	H 10.3 D 7.7	SE 14 A-1	I 69:9; §§112, 114
"	935	Elg 1-ha jgl dk gr slt bkn	H 13.6 D 7.2	SE 13 A-6	_____
"	936	Iron II lamp, iner rm slt bkn	12 x 12.6	SE 23 A-12	_____

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
7-1	937	Spheroidal wt (fm like 864) w hole through axis	H 3.3 D 4.6	SE 23 A-12	III 63: 4
"	938a	Lge iron sword cpl in 5 pcs	L 62.5 W 4.8	NW 3 Cist	III 61: 12
"	938b	Wh-bur bowl bf int	H 7.7 D 20.8	SE 23 A	I 62: 7; §117
"	940	Iron nail w hd	9.1 x 1	NW 3 Cist	_____
"	942	Fgmt hollow animal fig bkn	5.5 x 5.3	SE 24 A-4	_____
7-3	943	Hd & bo of animal fig pntd stripes on back bkn	L 10.9+ H 7.4	NW 21-13	_____
"	944	Elg 1-ha jgl bf (like 923) int	H 12.5 D 6.7	NW 21-5	_____
"	945	Iron II lamp rm bkn	_____	NW 21-13	_____
"	946	Iron knife in 2 pcs incr	13.4 x 2.6	SE 13 A-12	_____
"	947	Pottery rattle slt bkn	H 6.6	SE 13 A-11	_____
"	948	Torso of animal fig bf bkn	7.5 x 4.3	"	_____
"	949	Bone ear pendant slt bkn	5.2 x 0.7	NW 31-1	III 64: 10
"	950	Elg 1-ha jgl bf incr bkn	H 13.7 D 7.5	SE 13 A-12	_____
"	951	Do, int	H 13.9 D 7.1	SE 4-A	_____
6-30	952	Squat jg env bt dk br bf bkn	H 9.1 D 6.8	SE 23 A-13	_____
"	953	Elg 1-ha jgl bf slt bkn	H 10.6 D 5.3	"	_____
7-1	954	Wh-bur bowl rd br slt incpl	H 9.1 D 8.8	SE 23 A-12	I 65: 24; §117
7-5	955	1-ha jgl bf int	H 9.1 D 5.8	NW 21-6	I 69: 10; §§112, 114
6-27	956	1-ha jg gr br incr bkn	H 12.2 D 10.7	SE deb A	I 57: 1; §111
7-5	957	Sm bowl w double ridge around bo fl bt gr int	H 6.5 D 8.8	SE 15 A-4	_____
6-28	959	Sm spheroidal st wt (?)	3.6 x 2.4	SE 22 A-11	III 63: 8; §55
"	960	Sm st wt (?)	3.7 x 2.8	"	III 63: 14
"	961	Scoria rubbing stone w perf	H 4.8 W ba 4.1	SE 13 A-2	III 63: 10
6-27	962	Iron II lamp bkn	12.4 x 12.7	SE deb A	I 70: 7; §119
7-7	965	Bone ear pendant int	5.2 x 0.7	SE 14 A-5	III 64: 8
"	966	Elg 1-ha jgl w vt bur int	H 13.4 D 7.2	SE 14 A-4	_____
"	967	Elg 1-ha jgl w vt bur rd br int	H 11.5 D 5.7	SE 14 A-6	I 68: 34; §§112f., III, §153
"	968	Elg 1-ha jgl gr-br vt bur slt bkn	H 11.2 D 6.5	"	_____
"	969	Do bf slt bkn	H 14.4 D 6.5	SE 22 A-7	_____
"	970	Do	H 14.2 D 7.5	SE 14 A-6	I 69: 30
"	971	Squat 1-ha jgl bf int	H 12.1 D 7.15	SE 14 A-5	I 68: 36; §§112f.
"	972	Elg 1-ha jgl w vt bur bf tp bkn	H 12.2 D 6.6	SE 22 A-8	_____
"	973	1-ha jg gr br cpl	H 15.1 D 13.5	"	I 57: 8; §111
"	974	Squat 1-ha pot gr slt bkn	H 9.9 D 11	"	I 69: 1; §§112, 114

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7-7	975	Do rd bf slt bkn	H 9.5 D 8.9	SE 22 A-9	I 69: 2; §§112, 114
"	976	Gr bur jgl int	H 7.2 D 5.7	SE 22 A-8	I 68: 28; §§112f.
"	977	Do	H 6.9 D 5.1	SE 14 A-5	I 68: 27; §§112 f.
"	978	Do, but unbur	H 7.7 D 5.4	SE 22 A-8	I 68: 31; §§112 f.
"	979	Bur jgl br bf int	H 6.3 D 4.8	"	I 68: 32; §§112 f.
"	980	Do slt bkn	H 7.8 D 5.6	SE 22 A-4	I 68: 23; §§112 ff.
"	981	Sm bowl br-bf to gr-br int	H 2.7 D 6.3	SE 22 A-9	I 65: 16; §117
"	982	Haematite wt or rubbing st	5.2 x 3.5	SE 22 A-8	III 63:20
"	983	Hf st cosmetic palette	H 3.7 D ba 4.9	SE 14 A-6	III 27, B: 8
7-8	984	Gr bur jgl int	H 6.9 D 4.8	SE 13 A-19	I 68: 24; §§112f.
"	985	Elg 1-ha jgl w vt bur slt bkn	H 14.8 D 7.9	SE 13 A-18	I 69: 28; §112
7-7	986	Astarte hd badly worn	H 5.5 W 3.8	SE 14 A-6	III 31: 2; 54: 7
"	987	Animal fig br bf badly bkn	L 10+ H 6.4+	NW 3 Cist 1	—
"	988	Torso of Astarte fig	H 7+ W 6.8	SE 12-A	III 31: 10; 54: 11
"	989	Sm wh-bur bowl rd-bf bkn	H 5.3 D 13.1	SE 13 A-16	I 67: 14; §117
7-3	990	Wh-bur bowl badly bkn	H 9.1 D 24.4	NW 21-1	I 61: 10; §117
6-25	992	1-ha jg rgb bf tp wg (like 997 in fm)	H 20.8 D 15.9	SE 31 Cist 1	—
"	993	Do bkn	D 14.6 D ba 6.8	"	—
"	994	Do	H 27 D 17	"	—
"	995	Do tp bkn	H 18.1 D 17.9	"	—
"	996	Do bkn	H 22.9 D 15.7	"	—
"	997	Do gr epl	H 24.8 D 19	"	I 58: 5; §111
"	998	Do gr bkn (like 1099)	H 25 D 18.3	"	—
"	999	Do gr bkn	H 22.8 D 18.1	"	I 59: 11; §111
"	1000	Do br bf tp wg	H 21.1 D 18.5	"	—
7-9	1004	Sm hemispheroid st w hole in tp	2.8 x 1.9	SE 4 A-3	—
"	1005	1-ha bur jgl dk gr slt bkn	H 6.6 D 5.4	"	I 68: 25; §§112f.
"	1006	Do lt br bf slt bkn	H 6.2 D 4.6	"	I 68: 26; §§112f.
"	1007	Do bf int	H 5.8 D 3.6	"	I 68: 29; §§112f.
"	1008	Do br bf int	H 6.35 D 5.1	"	I 68: 30; §§112f.
"	1009	1-ha jgl rd bf unbur	H 6.3 D 3.9	SE 13 A-5	I 67: 34; §§114, 118
"	1010	Sm 2-ha lentoid flask br bf bur slt bkn	H 9.1 D 5.4	"	I 67: 36; §118
"	1011	Elg 1-ha jgl w vt bur slt bkn	H 12.6 D 6.7	NW 3 Cist	I 69: 26; §112
"	1012	Do dk iner	H 13 D 7	SE 4 A-3	I 69: 27; §112
"	1013	Sm jr br bf iner slt bkn	H 13.4 D 13.1	"	I 66: 15; §§112, 115
"	1017	Iron II lamp bkn	11.2 x 12	SE 14 A-9	—
"	1018	Iron II lamp (toy) stnd slt bkn	6.9 x 6.4	SE 3 A-9	I 70: 11; §119
"	1019	Astarte hd	4.4 x 7.3	SE 4 A-3	III 31: 12; 54: 8

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7-9	1021	Lge clay jr stopper	H 7 D 10.5	SE 13 sub A-16	—
"	1022	Hd of animal fig dk gr	H 7.5 W 4	SE 4 A-3	III 27, B:2; 58:2
"	1024	Astarte fig, crude & bkn	H 6.3 W 4	SE 13 A-5	—
7-8	1025	Elg 1-ha jgl iner bkn	H 13.8 D 7.15	SE 13 A-16	I 69:24; §112
7-7	1026	Ps w letter <i>teth</i> ined be- fore baking (like I, p. 88, fig. 15:3)	5.8 x 6.5+	SE 22 A-7	—
7-9	1027	Min 1-ha jgl (like 2612) rd bur slp tp wg (drawing wrongly finished above)	H 3.7+ D 4.45	SE 13 A-5	I 67:27; §118; III §157
"	1028	Sm 1-ha jg slt bkn	H 9.5 D 9.5	"	I 69:3; §§112, 114
"	1029	Thick-walled 1-ha jg slt bkn	H 9.5 D 8.8	"	I 67:32; §118
"	1030	Sm 1-ha jg lt rd-br slt bkn	H 11.2 D 8.8	SE 12 A-7	I 69:4; §§112, 114
"	1031	Sm jr lt br vt bur int	H 7 D 6.8	"	I 67:30; §118
"	1032	Squat jr w 3 sm knobs rd-br slp int	H 7.85 D 9.3	"	I 67:22; §118
7-7	1033	Sm bowl br bf iner bkn	H 5.85 D ba 4.1	SE 13 A-6	I 67:16; §117
7-10	1034	Elg 1-ha jgl w vt bur int	H 14.5 D 7.4	SE 14 A-11	I 69:22; §112
"	1035	Bl bur jgl cpl	H 6.35 D 5.45	SE 14 A-9	I 68:21; §§112 f.
"	1036	Do slt bkn	H 5.6 D 5.2	SE 3 A-6	I 68:22; §§112 f.
"	1037	St playing pc	H 6.35 D ba 5.2	SE 12 A-1	III 62:15
"	1038	Iron II lamp bkn	12 x 18.5	SE 3 A-6	—
7-5	1039	Lge 4-ha wh-bur bowl (ancient repair) nearly cpl	H 18 D ba 11.8	SE 12 A-9	I 60:2; §117
7-7	1040	Do (anc. rep.) bkn	H 17 D 32	SE 12 A-8	I 60:10; §117
7-8	1041	Do bkn	H 23 D 40.5	SE 4 A-1	I 60:7; §117
7-7	1044	Wh-bur bowl no ha bkn	H 8.8 D 20.8	SE 22 A-7	I 61:7; §117
"	1045	Do	H 7.8 D 22.7	"	I 61:6; §117
"	1046	Do	H 4.5 D 16.4	"	I 65:11; §117
"	1047	Do (wh-bur inside!) cpl	H 6.1 D ba 9.3	"	I 67:19; §117
7-5	1048	Sm bowl db rd bf cpl	H 5.5 D ba 4.6	SE 13 A-8	—
7-11	1049	Sm hemispherical haema- tite wt	3.5 x 2.4	SE 23 A	III 63:17; §44
"	1051	Elg 1-ha jgl w vt bur	H 11.65 D 6.3	SE 22 A	I 69:23; §112; III §153
7-5	1052	Sm wh-bur bowl bkn	H 7.3	SE 13 A-8	I 62:6; §117
7-11	1053	Iron II lamp bkn	12.4 x 13.1	SE 22 A	I 70:1; §119
7-7	1054	Wh-bur bowl bkn	H 9.1 D 23.8	SE 22 A-4	I 61:8; §117
7-2	1055	Wh-bur bowl cpl	H 7.1 D 21.15	SE 13 A-8	I 61:4; §117
7-11	1056	Pt of iron sickle in 2 pes	9.15 x 2.6	SE 22 A	—
7-7	1057	Wh-bur bowl bkn	H 7.1 D ba 7.7	SE 22 A-4	I 65:6; §117

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6-30	1058	Do	H 6.4	SE 22 A-5	I 62: 9; §117
7-8	1059	Bowl wh-bur inside and outside (!)	H 4.1 D ba 5.5	SE 14 A-1	I 65: 26; §117; III §160
7-7	1060	Sm wh-bur bowl	H 5.5 D ba 4.1	SE 22 A-4	I 67: 13; §117
7-9	1061	Bowl no ha rd-bf slp inside & coarse wh-bur outside (early A?)	H 9.9 D ba 8.2	SE 3A-1	I 61: 5; §117
7-2	1063	Wh-bur bowl	H 5.1 D ba 8.5	SE 13 A-8	I 67: 12; §117
6-30	1064	Bowl w br-bf slp & wide bds of rd-br slp inside and outside, bkn	H 5.5 D ba 6.2	SE 22 A-5	I 65: 8; §117
7-9	1065	Squat bowl w outer srf wh-bur	H 6.5 D 9.85	SE 13 A-5	I 67: 24; §118
7-11	1066	Horse fig bkn	H 4.9	SE 23	III 58: 5
7-9	1068	Stpd jr ha	Stp 2.8 x 1.8	SE 3 A-9	I 40: 3; §§101, 107
7-7	1070	Sm hemispheric wt	4.2 x 3.4	SE 14 A-6	III 63: 16; §44
7-9	1071	3 pcs w incd letters	—	SE 12 A-7+ SE 13 A-6	I, p. 77, fig. 12: 3; §101; III 60: 6
7-12	1072	Jgl bf vt bur slt bkn	H 10.2 D 7.65	SE 23 A deb	I 69: 18; §§112, 114
"	1073	Bl bur jgl slt bkn	H 6.6 D 4.55	SE 3 A	I 68: 20; §§112 f.
"	1074	Do	H 6.85 D 5	"	I 68: 19; §§112 f.
7-3	1075	Wh-bur bowl lt br slp bkn	H 5.25	SE 13 A-13	I 65: 30; §117
7-11	1076	Do	H 9.45	SE 23 A-3	I 61: 9; §117
7-12	1079	Copper javelin hd	9.65 x 1.9	SE 13 deb A-B	III 62: 6
"	1080	Whetst w 2 holes	6.85 x 2.4	SE 3 deb	III 62: 13
"	1081	Cosmetic palette	H 2.8 D 7.75	SE deb A	III 27, B: 9
7-7	1082	l-ha jg rd-bf slp slt bkn (like 973 but lger)	H 20.3 D 15.5	SE 13 A-16	—
"	1083	Do iner int	H 18 D 14	SE 14 A-1	I 57: 9; §111
6-29	1084	Sm l-ha jg br rd slp	H 13.4 D 10.1	SE 22 A-6	I 57: 6; §111
6-28	1085	Amph w knob ba rd bf srf bkn	H 18 D ba 2.9	SE 13 A-1	I 53: 7; §108
7-9	1086	Sm piriform jr dk gr srf bkn	H 7 D 1.55	SE 13 A-6	I 67: 33; §118
6-30	1087	Sm squat l-ha jg rd br slp bkn	H 7.2 D ba 5.3	SE 23 A-13	I 67: 31; §118
"	1088	Sm spher. l-ha jg tp bkn	H 9.35 D 8.15	"	—
7-9	1089	Sm bowl rd-br slp w groove (not ledge as shown on right side of drawing) below rm	H 6.25 D 14.7	SE 13 A-6	I 67: 7; §117
7-10	1090	Wh-bur bowl bkn	H 7.9 D 23	SE 4 A-4	I 61: 13; §117
7-1	1091	Do	H 7.9 D 24.4	SE 23 A-12	I 65: 21; §117

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7-9	1092	Do	H 9.05 D 23.4	SE 13 A-5	I 61: 14; §117
"	1093	Do	H 10.3 D 23.4	SE 12 A-2	I 61: 15; §117
"	1094	Sm do	H 4.85 D 13.6	SE 13 A-5	I 67: 8; §117
7-3	1095	Cp br bf bkn	H 13.6 D 12.1	NW 21-13	I 56: 6; §109
7-1	1096	1-ha jg rd br slp bkn	H 13 D 12	SE 14 A-2	_____
7-12	1097	Lge cp rd bf bt wg	H 19.9 D 22.4	SE	I 56: 14; §109
7-9	1098	Wh-bur bowl bkn	H 9.35 D 25.2	SE 13 A-5	I 61: 16; §117
7-2	1099	1-ha jg rd bf	H 25.4 D 19.5	SE 31 Cist	I 59: 9; §111
"	1100	Do incr bkn	H 20.5 D 17.9	"	I 58: 3; §111
"	1101	Do bkn	H 23 D 16.8	"	I 58: 4; §111
7-2	1102	Elg 1-ha jgl dk gr vt bur bkn	H 13.9 D 7.1	SE 31 Cist	I 68: 44; §§112 f.
"	1103	1-ha jg rd bf bkn (like 1153)	H 18.3 D 16.25	"	_____
"	1104	1-ha jg rd bf bkn	H 19 D 17	"	I 58: 6; §111
"	1105	Do, br	H 24.7 D 17.9	"	I 58: 8; §111
"	1106	Sm wh-bur bowl bkn	H 5.6 D ba 3.45	"	I 67: 4; §117
7-14	1107	Sm bowl bf rin slt bkn	H 2.95 D ba 5.1	NW 21-6	I 65: 14; §117
"	1108	Cosmetic palette	H 3 D 8.05	SE deb	III 27, B: 3
"	1109	St pestle(?) w hole thro tp & fl bt	H 4.9 D 4.3	NW 21-11	III 63: 9
"	1111	Rect. glass bead w lt gr & bl stripes (B?)	2 x 1.4	SE deb	II 39: 9
"	1112-3	Copper fibula in 4 pcs (B)	L bow 7.8 L pin 6.6	"	III 63: 39
"	1115	Iron II lamp bkn	12 x 13.7	NW 21-11	_____
7-15	1116	Do	12 x 12.25	SE 3	_____
"	1117	Do	11.8 x 11.6	"	_____
7-14	1118	Torso animal fig	H 4.3+ W 3.3+ L 9.2+	SE 23	_____
"	1119	Torso Astarte plaque	H 6.5 W 7.4	NW 21-15	III 31: 8; 54: 10
7-15	1120	Md pt of Iron I fertility fig bf (B)	H 5.2 W 4.3	SE 14 near Silo 36	II 26: 7; III 55: 2
"	1122	Elg 1-ha jgl rd bf incr int	H 14.5 D 7.2	SE 3 deb	I 68: 43; §§112 f.
"	1123	Squat 1-ha jgl bf incr int	H 8.15 D 7.9	"	I 69: 5; §§112, 114
7-16	1124	Elg jgl tp wg	H 13.5 D 7.4	"	_____
"	1125	Iron II lamp, slt bkn	12.1 x 12.5	"	_____
7-15	1126	1-ha jg rgb rd bf slp w narrow nk rm & ha bkn (no parallel found)	H 20.5+ D 15.1 Min D nk 5.2	SE 3	_____
"	1127	1-ha jg fl bt (like 1200) tp bkn	H 18.8 D 14.2	"	_____
7-10	1128	Lge unbur bowl bkn	H 13.5	SE 3 A-5	I 66: 4, §§112, 117
7-7	1129	Sm wh-bur bowl rd br slp bkn	H 5.6 D ba 8.5	SE 22 A-7	I 67: 5; §117

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7-7	1130	Sm wh-bur bowl dk gr bkn	H 4.9	SE 22 A-7	I 67: 11; §117
6-27	1131	Sm wh-bur bowl br rd slp db	H 7 D ba 4.2	SE 15	_____
7-12	1132	Lge 3-ha jr w false spt slt incpl	H 32 D 4.6	SE 12 A-6	I 53: 3; §106
7-9	1133	Do	H 35 D 46	SE 12 A-7	I 53: 1; §106
7-12	1134	4-ha pi rbd ha incr slt bkn	H 66 D 67	NW 21-11	I 52: 11; §104
7-8	1135	Do	H 63.5 D 64	SE 22 A-13	I 52: 10; §104
7-16	1136	Iron sickle in 4 pcs w 3 rivets at end	L 27	SE 3 A	_____
"	1137	Bl bur jgl int	H 5.7 D 4.55	SE deb	I 68: 17; §§112 f.
7-15	1138	Iron axehd bkn	L 7.8 W 5.5	SE 3 A	_____
7-16	1139	Iron nail	L 6.8	SE A deb	_____
"	1140	Iron fibula pin	L 7.8	"	_____
"	1141	Sm haematite wt (?) ob- long w slt rnd edges	2.25 x 1.3	"	III 63: 19
7-17	1145	Perf. agate (?) bead	L 2.45	"	II 39: 8
7-9	1146	Sm bowl incr bkn	H 6.1 D ba 4	SE 3 A-4	I 67: 15; §117
7-5	1147	Lge amph incr slt bkn	H 52 D 55	SE 13 A-6	I 53: 5; §104; III 67: 7
"	1148	Lge cp br bf bkn	H 35 D 52	"	I 56: 8; §109
"	1149	Hm jr bkn	H 38 D 33	"	I 52: 1; §103; III 67: 8
7-17	1151	Copper arrowhd int	L 7	SE 13 A-12	III 61: 21
"	1152	2 iron nails	L 6.6 & 5.5	"	_____
7-15	1153	1-ha jgl rd br slp bkn	H 14.1 D 12.5	SE 4	I 57: 5; §111
7-9	1154	Wh-bur dec rd bf slp bkn	H 25.25 D 18.3	NW 4 Cist 1	I 59: 2; §111
7-16	1155	Elg 1-ha jgl gr br int	H 12 D 7	SE 13 A-12	I 68: 41; §§112 f.
"	1156	Bl bur jgl int	H 6.2 D 4.8	SE 22	I 68: 18; §§112 f.
7-14	1157	Lge 4-ha bowl gr srf bkn	H 23 D 61	SE 14 A-6	I 60: 4; §117
7-9	1158	Do gr br slp	H 18 D 68	SE 13 A-6	I 60: 5; §117
7-1	1159	Do	H 20 D 63	SE 22 A-13	I 60: 6; §117
7-14	1160	2-ha cp rd br slt bkn	H 22.5 D 22	NW 21-11	I 56: 12; §109
"	1161	Do	H 12.5 D 23.2	SE 13 deb A	I 56: 13; §109
"	1162	1-ha jr gr br slt bkn	H 18.9 D 16.7	SE deb A	I 57: 11; §111
"	1163	Elg 1-ha jgl w vt bur rd bf bkn	H 14.3 D 7.5	"	I 68: 45; §§112 f.
"	1164	Do	H 13.1 D 7.6	SE deb	_____
7-7	1165	Pointed amph w knob ba	H 19.1 D 12.8	SE 23-7	_____
7-16	1171	Jr-ha w stp (criss cross of 5 vt & 5 ho lines)	1.3 x 0.85	SE 13-13	_____
"	1172	Bowl incr bkn	H 7.75 D 7.55	SE 3	I 62: 13; §117
7-14	1173	Lge amph gr rd br cpl	H 47	NW 21-11	I 53: 4; §104
7-16	1174	1-ha jg bf (like 973) bkn	H 16.7 D 14.2	SE 14 deb	_____
7-17	1178	Copper bracelet in 2 pcs (B)	5.25 x 4.55 Th 0.4	SE 12-B	III 62: 8

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7-17	1180	Elg jgl w vt bur lt rd br int	H 13.4 D 7.45	SE 13-4	_____
"	1181	Do bkn	H 14.15 D 7.8	SE 14-6	_____
"	1182	Do	H 13.1 D 7.2	SE 3-3	_____
7-9	1183	Bowl no ha bkn	H 9.2 D ha 8.5	SE 14 A-7	I 62: 20; §117
7-18	1184	Iron plow-tip	L 14.1 Max H 4	SE 22 A-7	III 61: 14
"	1185	Iron sickle in 3 pcs	L 26.2 W 5.1	"	III 61: 13
7-17	1187	Animal fig, only horse's hd int	L 5.9 H 5.1	SE 13 A-6	III 58: 10
7-10	1188	Sm bowl incr bkn	H 5	SE 14 A-7	I 65: 2; §117
7-17	1189	Animal fig, only horse's hd int	L 6 H 4.85	SE 12 A-8	III 58: 10
7-10	1190	Iron II lamp bkn	12 x 12.2	SE 14 A-7	_____
7-18	1191	Pointed amph w knob ha rd slp int	H 22.3 D 10.3	SE 4 A-4	I 53: 9; §108
"	1192	Sm wh-bur dec rd br slp	H 13.9	"	I 59: 5; §111
"	1193	Elg jgl w vt slp rd bf int	H 14.8	"	I 68: 42; §§112 f.
"	1194	1-ha jg w glob. bo bf (like 889) slt bkn	H 13.1 D 8.7	SE 14 A-3	_____
"	1195	Jr dk rd br slp int	H 11.7	SE 14 A-2	I 70: 16; §120
7-17	1196	Shallow 2-ha cp rd br bkn	H 14.7	SE 12 A-2	I 56: 11; §109
"	1197	Deep 2-ha cp rd br bkn	H 14.5	"	I 56: 5; §109
"	1198	Elg 1-ha jgl br rd bkn	H 12.1	"	I 69: 19; §112
7-18	1199	Elg jgl dk gr vt bur (B)	H 7.9	SE 23 B	I 51: 11; §94
7-17	1200	1-ha jg rd br slt bkn	H 20.1	SE 3 A-3	I 58: 2; §111
"	1201	1-ha jgl rd br vt bur bkn	H 12.6	"	I 69: 25; §112
7-18	1202	Elg jgl dk gr vt bur bkn (A ₁)	H 11	SE 13 A-3	I 69: 20; §112
"	1203	Squat jgl vt bur lt rd-br slp int	H 9.85	"	I 69: 15; §§112, 114
7-17	1204	Shal 2-ha cp rd br bkn (A ₁ ?)	D 21	SE 3 A-3	I 56: 2; §109
"	1205	Do (A ₁)	H 12.95	SE 12 A-2	I 56: 3; §109
7-19	1206	Wh-bur bowl br-rd slp int	H 9.4	SE 14 A-8	I 62: 5; §109
"	1208	Fertility plaque bf tp wg (B)	H 12	SE 24 B	II 26: 8 III 55: 3
7-18	1209	Copper arrowhd	L 5.95	SE 14 A-10	III 61: 19
"	1212	Perf. bl st whorl	2.3 x 1.2	SE deb A	II 38: 22
"	1214	Do (B?)	4.55 x 2	SE 13-3 (A ₁)	III 63: 2
7-19	1215	Copper pin in 2 pcs (B)	L 7.9	SE 22 B	_____
"	1217	Iron sickle bkn in 2 pcs	L 11.6 W 3	SE 24 A	_____
"	1218	Sm sau gr bf int	H 1.95	SE 24 A-5	I 65: 18; §117
"	1220	2 pcs of iron sledge ham- mer(s)	_____	SE 4 A-4	_____
"	1221	Iron sickle bkn in 2 pcs	L 14.8	"	_____
"	1223	Strainer w perf ha slt bkn	D 6.7	SE 23 A-12	_____

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7-19	1224	Elg 1-ha jgl gr bf epl	H 14	SE 24 A-5	I 68: 37; §§112 f.
"	1225	Elg jgl vt bur br-rd slp slt bkn	H 12.8 D 7.2	SE 13 A	_____
"	1226	Torso of human fig	H 7.1 W 4.1	"	III 29: 11; 55: 12
7-18	1227	Tp of fertility plaque (B)	H 7.35+	SE 23 B	II 26:10; III 55: 1
"	1228	Hd of Astarte fig	H 6.1+	SE 23 A	III 31: 4; 54: 3
7-19	1229	Hd of bull fig bf	L 4.9+ W 5.1	SE 24 B	III 29: 2; 55: 5; §141
"	1230	Copper plow-tip (B)	L 11.9+ H 3.7+	SE 23 B	III 62: 4
"	1231	End of iron plow-tip bkn	L 13.7 H 5.5	SE 22 B	III 61: 15
7-15	1232	Torso of animal fig w rd slp & bds of yellowish- br pnt on back	L 8.9+ W 5.4	SE 3	_____
7-18	1234	Hd of animal fig (horse?) dk rd slp	L 6.6 H 4	SE 14 B	III 58: 9
7-15	1235	Hd of animal fig.	L 5.1	SE 23	III 58: 8
7-21	1236	Copper axe-hd w edges split (B)	L 15.2 W 6.1	SE 22 B	III 62: 5
7-19	1237	Wh-bur bowl rd bf slp bkn	H 9.2 D 23	SE 3	I 62: 2; §117
7-18	1238	Wh-bur bowl br slp bkn	H 9.05 D 25.1	SE 13 A-3	_____
7-21	1239	Female hd carved on end of bone bored lengthwise, right front side of face bkn (B)	L 7.8	SE 24 B	III 29: 4
7-15	1240	Hf tripod mortar	H 8.65 D rm 13.4	SE 3 deb	_____
7-17	1241	Potter's mk on ha in fm of 6-pointed star ined after baking	D mk 1.7	SE 13 B	_____
"	1242	Bowl bf bkn	H 9.05	SE 3 A-4	I 62:1; §117
7-21	1243	Elg 1-ha jgl vt bur bf int	H 13 D 7.6	SE 4 A-2	I 68:38; §§112 f.
"	1244	Do lt rd br slp slt bkn	H 14.6	"	I 69: 29; §112
"	1245	Do	H 13.25	"	_____
"	1246	Do dk rd br slp	H 13.85	"	_____
"	1247	Do rd slp int	H 12.9	"	I 68:35; §§112 f.
"	1248	Do, dk rd br slp slt bkn	H 11.5	"	_____
"	1249	Do	H 11.3 D 5.7	"	_____
"	1250	Squat jgl vt bur rd-br slp int	H 9.7	"	I 69: 7; §§112, 114
"	1251	Do lt br slp	H 9.65	SE 13 sub A-1	I 69: 6; §§112, 114
"	1252	Do	H 8.6	SE 4 A-2	I 68: 1; §§112 f.
"	1253	Do rd slp	H 8.5	"	I 68: 2; §§112 f.
"	1254	Do lt rd br slp	H 8.75	"	I 68: 3; §§112 f.
"	1255	Bl bur jgl int	H 7.1	"	I 68: 4; §§112 f.

7-21	1256	Do	H 6.15	SE 4 A-2	I 68: 5; §§112 f.
"	1257	Sm bowl rd br slp int	H 6.3	"	I 67: 25; §118
"	1258	Do int	H 5.6	"	I 67: 26; §118
"	1259	Do rd slp int	H 6.9	SE 4 A-4	I 67: 28; §118
7-18	1260	Clay stopper w bt slt bkn	H 6.1	SE 13 A-3	_____
			D ba 5.2		
7-21	1261	Sm cp dk rd br slt bkn	H 8.85	SE 4 A-2	I 56: 4; §109
"	1262	Sm ptr br rd slp int	H 13.2	"	I 66: 24; §§112, 114
7-19	1263	1-ha jg bf bt wg (like 1368)	H 19.95	SE 23 sub 12-A	_____
			D 16.35		
7-21	1264	Sm 1-ha jg spher bo bf tp wg	H 12.35 D 10.7	SE 4 A-2	_____
"	1265	Sm 1-ha jg lt rd br slp slt bkn	H 12.85	"	I 57: 3; §111
"	1266	Dec rgb rd br slp, tp wg (like 1154)	H 20+ D 18.15	"	_____
"	1267	Bowl bf slp slt bkn (B)	H 15.6 D 24.9	SE 22 B-4	I 50: 9; §92
"	1268	Imported jgl w rd br slp & bds of dk pnt slt bkn	H 8.5	"	I 51: 9; §95
"	1269	St cosmetic palette	H 3.1 D ba 4.9	SE 4 A-2	III 27, B: 7
"	1270	Whetst	L 10.7 W 2.2	"	III 62: 12
"	1272	Dk gr scaraboid (B)	1.4 x 2	SE 12 B-3	II 39: 6
"	1274	St whorl	D 2.15	SE 12 A-3	II 38: 18
"	1275	Sm copper awl (B)	L 9.2 W 1.2	SE 12 B-3	III 62: 3
"	1276	Copper bracelet (B)	D 5.9	"	III 62: 7
"	1278	Fgmt iron knife	5.4 x 2.35	SE 4 A-2	III 61: 17
"	1279	Iron knife 3 pcs w 2 rivets on ha	L 10.7 W 2.5	"	III 61: 16
"	1280	Bone ear pendant bkn	4.8 x 0.9	"	III 64: 11
"	1281	Animal leg, bkn (B)	L 6.6	SE 24 B-4	III 29: 5
			W knee 2.5		
"	1282	Home-made Astarte fig bkn	H 7	SE 4 A-2	III 31: 7; 54: 9
7-22	1284	Carnelian bead (B)	1.0 x 0.55	SE 12 B-1	II 39: 19
"	1291	Bl st whorl (B)	2.4 x 0.95	SE 13 B	II 38: 17
"	1292	Pc of sheet copper	7.5 x 4.6	SE 4 A-6	_____
7-18	1293	Cp rd br bkn (B)	H 14.5	SE 12 B	I 56: 1; §109
7-19	1294	Sm squat jr w fl bt & 2 ha br rd slp bkn	H 10.4 D 9.0	SE 22 A	_____
			D ba 5.85		
7-21	1295	Sau dk gr int	H 2.6	SE 4 A-2	I 65: 13; §117
7-22	1296	Iron II lamp int	13.2 x 13.55	SE 14 A-3	_____
7-21	1297	Sm bowl rd bf slp bkn	H 6.7 D 9.6	SE 4 A-2	I 67: 20; §118
7-19	1298	Wh-bur bowl rd bf slp bkn	H 13.5 D 31.15	SE 24 A-5	I 66: 6; §§112, 117
"	1299	Do br rd slp	H 21 D 44.5	"	I 60: 8; §117
7-22	1300	Do rd bf slp	H 19 D 40	SE 14 A-3	I 60: 9; §117
"	1301	Elg jgl w vt bur br rd slp bkn	H 14.8 D 7.5	SE 4 A-6	_____

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7-22	1302	Do dk rd br slp int	H 13 D 7.2	SE 4 A-4	I 68: 39; §§112 f.
"	1303	1-ha jgl br slp vt bur int	H 9.5 D 7.15	SE 4 A-6	I 68: 6; §§112 f.
"	1304	Bl bur jgl of archaic type (A ₁ or B ₃) bkn	H 9.6 D 6.45	"	I 51: 8; §94
"	1305	Bl bur jgl int	H 6.7 D 5	"	I 68: 7; §§112 f.
"	1306	Wh-bur (inside & outs.) bowl rd slp bkn (A ₁)	H 6.6	SE 14 A-2	I 65: 27; §117; III §160
"	1307	Iron II lamp cpl	11.6 x 12.25	SE 14 A-3	_____
7-23	1308	Do, slt bkn	11.9 x 11.9	SE 14 A-4	_____
7-18	1309	Do	12.5 x 11.5	SE 4 A-4	I 51: 6; §93
"	1310	Ps, 2 pcs, ined design (A ₁)	H design 2.7	SE 14 A-2	I 40: 2; §122; III §160
"	1312	Wh-bur sau rd-br slp bkn	H 4.55 D ba 6.05	SE 14 A-3	I 65: 7; §117
"	1313	Bowl iner bkn	H 9 D ba 8.2	SE 4 A 1	I 61: 2; §117
7-22	1314	Sm bowl bf srf cpl	H 6.7	SE 12 B-2	I 51: 7; §92
7-18	1315	Wh-bur sau rd br slp bkn	H 4.2	SE 4 A-1	I 65: 5; §117
7-22	1316	Wh-bur bowl lt rd br slp bkn	H 9.55	SE 14 A-3	I 61: 3; §117
"	1317	Clay rattle, 1 end wg	7 x 7	SE 4 A-4	_____
7-21	1318	Hf rattle	D end 6.2	SE 12 A	_____
7-18	1319	Pot stnd rd bf bkn	H 5.0 D ba 8.55	SE 13 A sub 3	_____
7-22	1320	St whorl w flange	H 2.4 D 5.3	SE 13 A	III 63: 3
7-21	1321	Ps w archaic letters (B ₁₋₂ ?)	H <i>kaph</i> 1.5	SE 24 B-7	I, p. 74, fig. 11, §101; III 60: 1; §17
7-23	1322	Fl perf st dk gr (B)	4 x 3.1	SE 23 B-6	III 62: 14
"	1324	Bl st whorl (B)	2.8 x 1	SE 12 B	II 38: 16
"	1328	Astarte hd w nose bkn	H 7+	SE 13 Silo 32	III 31: 11; 54: 5
"	1329	Bust of Astarte fig	H 4.05+ W 7.2+	"	III 31: 9; 54: 12
7-21	1330	Squat pyxoid jr dk gr vt bur bkn (B)	H 7.9 D 6.95	SE 24 B-1	I 51: 4; §96
7-23	1331	Squat 1-ha jgl rd slp vt bur bkn	H 7.7 D 7.25	SE 23 A-6	_____
7-24	1332	Astarte hd	H 5 W 4.9	SE 14 A-3	III 31: 14; 54: 2
7-25	1333	Front of hollow bull's hd (B or C)	H 8.8 W 6.7	SE 22 deb	III 29: 3; 55: 4
7-22	1334	Torso & hd of animal fig.	H 10.2 W 6.1	SE 4 A-6	_____
7-21	1335	Wh-bur bowl rd br slp bkn	H 5.3 D 17.25	SE 4 A-2	I 62: 3; §117
"	1336	Do	H 7.4 D ba 7	"	I 62: 8; §117
"	1337	Do	H 8.25 D 21.1	"	I 62: 4; §117
7-24	1338	Bone ear pendant in 2 pcs	L 5.95	SE 24 A-4	III 64: 9
"	1345	Fgmt gold leaf (B)	2.1 x 2	SE 13 Silo 30	_____
7-22	1346	1-ha jgl w enc rgb glob. bo & rd br slp bur (B?)	H 8.4+ D 8.8	SE 2	_____
7-21	1347	Wh-bur bowl rd br slp bkn	H 10.25 D 24.3	SE 4 A-2	I 62: 11; §117

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7-11	1348	Do	H 8.5 D 26.5	SE 22 A-7	I 65, 20: b; §117
"	1349	Sm wh-bur bowl rd br slp bkn	H 6.3 D ba 3.8	"	I 67: 3; §117
"	1350	Do	H 4.85 D ba 5.1	"	I 65: 4; §117
"	1351	Sm bowl incr bkn	H 5.9 D ba 4.5	"	I 67: 2; §117
7-25	1352	Bone needle	L 5.9 W 0.9	SE 13 Silo 34	_____
"	1353	Iron arrowhd	L 6.8 W 1.4	SE 3 deb	_____
7-21	1357	Bowl dk rd slp bd pnt outside, bkn	H 6.7 D ba 10	SE 4 A-2	I 65: 22; §117
"	1358	Wh-bur bowl dk rd slp bkn	H 8.2 D 24.15	"	I 62: 16; §117
"	1359	Pot stnd bkn	H 13.7 D ba 19.8	"	_____
7-22	1360	1-ha jg rgb rd br slp tp bkn	H 10.5 D 13.7	SE 14 A-3	_____
7-23	1361	1-ha jg rd br slp bkn	H 15.3 D 12.8	SE 14 A-1	I 57: 10; §111
7-7	1362	St pillar bkn	H 23.6+ L ba 20.7	SE 4 A-3	III 65: 1; §55
7-24	1363	Wh-bur bowl rd slp bkn	H 11.2 D 30	SE 14 W	I 60: 11; §117
7-21	1364	Lge wh-bur bowl rd slp bkn	H 21 D 48	SE 4 A-2	I 60: 3; §117
7-24	1365	Sm do	H 7.9 D 23.05	SE 4 A-1	I 62: 15; §117
7-26	1368	1-ha jg incr bkn	H 22	NW 21-11	I 58: 1; §111
"	1369	Sm 1-ha jg incr bkn	H 11.7	"	I 57: 2; §111
7-25	1370	Potter's mk on ha	0.9 x 1.3	SE 3 A	Cf. I, p. 88, fig. 15: 10; §121
7-26	1375	Bl bur jgl bkn	H 5.6 D 4.65	SE 13 deb	_____
"	1376	Do int	H 6.7	NW 21-13	I 68: 8; §§112 f.
7-28	1382	St ring	4.15 x 1.5	NW 31-1	III 63: 1
7-26	1382a	Hd & nk of bull fig vt bur on br slp	H 8.3 W ba nk 6.8	SE 3-C (B?)	III 58: 7
"	1382b	Hd of animal fig	H 7.2 W hd 3.9	NW 31-1	_____
"	1383	Astarte hd	H 4.6 W 3.4	NW 22-5	III 31: 3
"	1384	Hollow bone pipe	11.4 x 1.3	SE 22 Silo 24	_____
7-22	1385	Ps w 4 incd letters	H letters 1.0	SE 4 A-4	I, p. 77, fig. 12: 4; §101; III 60: 4
7-18	1386	Ps w pntd animal (B)	_____	SE 12 B	I 40: 1; §97; III 29: 1, 1a
7-29	1387	Fertility plaque cpl (B)	H 15.4	SE 22 B or C	II 26: 6
7-28	1388	Bust of Astarte fig	H 7.8 W 6.5	SE 12 A	_____
7-29	1391	Sm iron knife w rivet for wooden ha (B ₃)	5.3 x 1.4	SE 23 B-8	_____
"	1393	2 iron pcs (B ₃)	_____	"	_____
"	1407	Scaraboid of red marble (B ₃)	2.35 x 2.0	"	III 29: 7
7-28	1411	Lge 1-ha jg incr slt bkn	H 21.5 D 10.7	NW 21-2	I 70: 14; §120
7-30	1412	Bl bur pyxoid jar slt bkn (B ₃)	H 8.8 D 7.6	SE 23 B-8	I 51: 5; §96

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7-30	1420	Bl bur jgl w lg nk tp wg (B ₂)	H 6.2+ D 6.25	SE 23 B-8	—
7-31	1431	Hf ivory disk (B or C)	D 4.6	SE deb	III 60:10
"	1438	Carnelian bead (B)	D 10 mm	SE 12 B Silo 43	II 39:20
"	1439	Faience bead (B)	L 10.5 mm D 7.0 mm	"	II 39:29
"	1445	Philistine bowl bf w bl & rd pnt tp wg (B)	H 7.9+ D 10.2	SE 12 B	I 51:18; §80
7-22	1446	Fgmt bowl bf (B or C)	H 7.2 D ba 5.4	SE 23-3 B-C	I 51:19; §92
7-24	1450	Bowl w chordal bur on rd slp bkn (B)	H 10.65	SE 24 B-1	I 51:17; §§87, 92
7-29	1467	Elg jgl w pinched lp slit bkn (B ₂)	L 12.1 D 7	SE 23 B-8	I 51:12; §94
7-30	1468	Astarte fig in 3 pcs slit bkn	H 12 W 7.75+	SE 13 A pit	III 31:6
7-26	1471	Wh-bur bowl rd slp slit bkn	H 9 D 23.15	SE 2	I 62:17; §117
8-4	1497	Elg jgl int	H 13.7 D 7.4	NW 31-1	I 68:40; §§112f.
7-28	1499	Wh-bur bowl rd br slp bkn	H 9 D 22.3	NW 31-4	I 62:18; §117
8-1	1501	Jgl rd hand-bur slp bkn (B)	D 6.6	SE 13 B	I 51:10; §94
8-5	1502	1-ha jgl iner int	H 12.35	NW 22-8	I 66:23; §§112, 114
8-4	1503	Wh-bur dec iner bkn	H 18.2 D 13.4	NW 31-1	I 59:1; §111
8-5	1505	Bl bur jgl slit bkn	H 6.8 D 5.1	NW 12-6	I 68:9; §§112f.
"	1506	1-ha jg dk rd slp tp wg (like 956)	H 13.75+ D 12.2	"	—
"	1507	1-ha jg iner bkn	H 10.5 D 7.8	NW 21-9	I 69:8; §§112, 114
8-4	1508	1-ha jg iner bkn	H 26.7 D 19.5	NW 31-1	I 58:7; §111
8-1	1509	Lge bowl 2-ha bf bkn (B)	H 22 D 32	SE 23 B-8	I 50:7; §92
8-5	1513	Sm st ring	D 4.3	NW 22-2	III 63:5
"	1518	Iron II lamp slit bkn	11.65 x 11.7	NW 31-4	—
8-4	1519	Do int	7.2 x 7.85	NW 12-6	I 70:10; §119
8-5	1520	Wh-bur bowl enc db no ha bkn (like 1172)	H 9.6 D 32	"	—
8-4	1521	Oblong rubbing st lower srf smooth & stained w ochre (B?)	10.7 x 7.8 H 5.3	SE 12 deb	—
8-1	1522	Torso of fertility fig (B)	5.9+ x 3.2	SE 23 deb	II 26:9
8-5	1523	Iron arrowhd on ps	L 5.15 W 1.8	NW 21-9	—
8-6	1524	1-ha jg br rd slp iner slit bkn	H 13 D 10.25	NW 22-4	I 57:4; §111
"	1525	Bl bur jgl int	H 5.8 D 5	NW 22-8	I 68:10; §§112f.
"	1526	Sm piriform 2-ha jr thick walls db bf srf tp bkn (lower pt like 1086; cf. <i>Megiddo</i> I, Pl 9:3)	H 5.9 D 6.25	NW 21-10	—

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
8-5	1527	Sm bowl iner bkn	H 6.5 D ba 6.6	NW 12-6	I 62: 10; §117
"	1528	Sm wh-bur bowl dk gr bkn	H 6.1 D ba 5.75	"	I 65: 10; §117
8-6	1529	Iron I lamp bkn (B)	12.9 x 14.4	SE 14 B	I 51: 1; §93
8-5	1530	Lge 2-ha jr bf bkn	H 44.8 D 31.2	NW 12-6	I 53: 6; §104
8-4	1531	Torso of animal fig	L 10.3+ W 5.9	NW 21-9	III 58: 3
8-6	1532	Sm jr glob. bo wide flaring nk no ha rd slp vt bur tp bkn	H 10.7+ W 9	NW 21-12	_____
"	1537	Iron skinning knife(?)	L 11.7 W 4.7	NW 21-2	_____
"	1538	Fgmt iron sickle	L 12.4+ W 4	NW 21-12	_____
"	1544	Torso Astarte fig	H 8.25 W 6.7	NW 21-2	III 31: 5
8-7	1552	Sm stdn w bkn lamp	H 6.6 W 3.7	NW 22-4	_____
"	1553	Scoria rubbing st w ha	7.95 x 5.1 H 5.45	"	III 63: 12
"	1554	Animal vs white slp rd pntd stripes int	H 13.8 L 17.5	"	III 27, B: 1; 58: 1
"	1555	St cosmetic palette	H 1.6 D 6.4	"	III 27, B: 5
"	1556	Bowl iner int	H 8.3 D 21.7	NW 31-2	I 62: 19; §117
8-5	1558	Amph w knob ba br vt bur slp tp wg	H 23 D 13.9	NW 12-6	I 53: 10; §108
"	1559	1-ha jg enc ba rd bf srf bkn (like 1100)	H 18.7+ D 18.5	NW 11-6	_____
8-7	1560	Sm 1-ha jgl slt rnd bt rd slp bkn (like 1524)	H 12.65 D 10.2	NW 22-5	_____
8-5	1561	Wh-bur bowl dk gr iner bkn	H 10.75 D 26	NW 21-9	I 60: 12; §117
8-7	1562	Bl bur jgl slt bkn	H 6.9 D 5.2	NW 31-1	I 68: 11; §§112 f.
"	1563	Elg 1-ha jgl rd slp vt bur slt bkn	H 14.4 D 7	NW 22-4	I 68: 46; §§112 f.
"	1564	Iron II lamp int	12.9 x 13.1	"	_____
"	1565	Min amph iner int	H 10.25 D 6	NW 31-2	I 66: 17; §§112, 116
8-6	1566	Wh-bur bowl rd-br slp bkn	H 8 D 23.1	NW 31 deb	I 61: 1; §117
8-5	1567	Iron II lamp bkn	11.85 x 11.4	NW 11-6	_____
"	1568	Do	12.35 x 11.7	NW 31-1	_____
"	1569	Do	11.5 x 11.9	NW 11-6	_____
8-7	1570	2-ha cp bf bkn	H 17.4 D 26.8	NW 22-4	I 56: 10; §109
"	1589	Bowl rgb iner bkn	H 9 D 28.4	NW 42-2	_____
"	1590A	Do rd slp	H 4.65 D 17.2	NW 31-1(?)	I 65: 9; §117
"	1590B	Sau iner bkn	H 2.7 D 9	NW 21-1	I 67: 10; §117
"	1591	Hm jr iner bkn	H 34.2 D 23	NW 31-1	I 52: 2; §103
"	1592	Do	H 33.3 D 19.8	"	I 52: 9; §103
"	1594	Sm bowl w thick bt bkn	H 6.7 D ba 8.7	NW 31-2	III 26, B: 18
8-12	1600	Iron arrowhd bkn	H 6.25 W 0.9	SE 22-A	_____
8-6	1601	Tp of imported 1-ha jg	H 11.4+	NW 22-8	I 67: 35; §118
6-27	1616	2-ha cp slt bkn	H 13.1 D 13.3	SE 23	I 56: 7; §109

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8-14	1617	Scoria rubbing st w ha	L 5.8 H 4.0	NW deb A	III 63: 11
"	1618	Pointed 4-sided st	L 6.35 W 1.9	"	III 63: 13
8-12	1620	Elg 1-ha jgl vt bur bkn	H 13.35 D 7.1	SE 22 deb A	I 69: 21; §112
7-26	1621	Lentoid flask rd slp wh- bur bkn	H 22.1	NW 21-11	I 70: 15; §120
8-14	1626	Iron arrowhd	L 7.75 W 1.75	NW deb	III 61: 20
7-26	1629	2-ha pi bf tp wg	H 43 D 37	SE 14 B	I 50: 11; §94
6-27	1630	Bowl iner bkn	H 12 D 34	SE 23	I 66: 5; §§112, 117
7-3	1631	2-ha cp dk rd br bkn	H 16.7 D 42	NW 21-5	I 56: 9; §109
6-30	1632	Wh-bur bowl rd slp iner bkn	H 11.6 D 30.5	SE 23-13	I 66: 3; §§112, 117
7-24	1633	Sm bowl bf srf bkn	H 5.95 D 13.9	SE 14	I 67: 9; §117
7-28	1635	Bowl iner bkn	H 12.5 D 29.8	NW 21-13	I 60: 13; §117
7-24	1636	Wh-bur bowl dk rd slp bkn	H 6.9	SE 14	I 62: 14; §117
7-30 } 8-2 }	1644	Philistine bowl cream slp rd & bl pnt bkn(B)	H 13.8 W 15	SE 12 B	I 23: 1; §82
6-23	1718	Hd animal fig	6 x 4	Deb A	III 58: 11
"	1721	Bone ear pendant	6.5 x 0.85	SE 13, A ₂ pit	III 64: 1
"	1730	Bl bur jgl slt bkn	_____	"	_____
"	1739	Wh-bur bowl rd slp	15.4 x 4	"	III 24: 24
"	1740	1-ha jg bf bkn	24.5 x 19.2	"	III 14: 4
"	1741	Elg 1-ha jgl bf vt bur slt bkn	12.1 x 7.4	"	_____
"	1742	Bl bur jgl slt bkn	_____	"	_____
"	1743	Wh-bur bowl bf	_____	"	III 24: 23
6-21	1744	Elg 1-ha jgl bf vt bur bkn	_____	"	III 18: 21
6-23	1746	2-ha cp rd bf bkn	_____	Silo 62 (SE 12 A)	III 19: 1
"	1747	1-ha (orig. bur) jgl lt bf tp bkn	D 2.7	SE 12 A pit	_____
"	1748	Sm 1-ha jg rd bf slt bkn	_____	SE 13 A ₂ pit	III 16: 1; 68: 15
"	1749	Elg 1-ha jgl bf vt bur	_____	"	III 18: 29
"	1803	Astarte fig cpl	H 15.8 W 6.9	"	III 29: 12, 12a; 56: 3
"	1804	Do hd wg	H 10.5 W 7	"	III 55: 8
"	1805	Do tp wg	H 7 W 5.2	"	III 55: 11
6-29	1808	Do, hd only	H 5.8+ W 3.8	NW 22 deb A	III 56: 1
"	1809	Copper ring bkn	D 2.5	NW 22	III 64: 6
6-30	1817	Ba of Astarte fig	H 4.4+ W 4.1	NW 22-13	III 56: 9
"	1821	Iron arrowhd	L 5.4+ W 1.7	NW 22-11	_____
"	1822	Fgmt iron knife	L 5.3+ W 1.8	"	_____
"	1834	Min amph w 3 rd bds, int	H 9.5 D 7	NW 22-9	III 15: 1; 68: 13
"	1835	Elg 1-ha jgl vt bur w strainer bt	H 11.7 D 6.5	"	III 18: 19
"	1836	1-ha wh-bur dec rd bf	H 14 D 12.6	NW 22-11	III 16: 6; 68: 12

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7-1	1839	1-ha jgl rd bf vt bur slt bkn (like 1203)	H 9.2 D 6.8	NW 22-13	_____
"	1841	Elg 1-ha jgl bf slt bkn	H 14 D 7.2	NW 22-11	III 18: 26
"	1842	Sm 1-ha jg	H 22 D 16.5	"	III 14: 2
"	1847	Perf oval st	L 5 D 3.5	"	III 64: 19
"	1852	Bl bur jgl tp bkn	H 6 D 5	NW 22-10	_____
6-30	1857	1-ha jgl rd bf vt bur tp bkn (like 2594)	H 11.5 D 9	NW 22-12	_____
7-1	1860	Sm wh-bur bowl	D 13 H 4	NW 22-11	III 25: 6
6-30	1861	Sm bowl w ined ho rings smkd	H 6 D 12.5	NW 22-9	III 25: 7
7-4	1886	Copper awl (?)	L 6.4 W 1	NW 22-18	_____
6-30	1904	Wh-bur bowl rd slp	H 9.5 D 27	NW 22-9	III 21: 1
7-4	1911	Elg 1-ha jgl vt bur int	H 12.5 D 6.4	NW 22-17	III 18: 18
6-30	1915	Bowl rd bf unbur slt bkn	H 14 D 37.5	NW 22-11	III 20: 15
7-5	1952	Bl bur jgl	H 5.1 D 4.8	SE 4-A deb	_____
7-1	1954	Wh-bur bowl rd bf	H 8.7 D 23.2	NW 22-11	III 23: 12
7-2	1958	Do	H 9.2 D 25.2	NW 22-3	III 22: 14; 71: 4
"	1959	Do	H 8.5 D 25.6	NW 22-2	III 23: 4; 71: 3
7-8	1982	Rock crystal bead	1 x 0.7	NW 31-6	_____
6-30	1987	Iron II lamp bkn	H 4.1 W 12.8	NW 22-11	_____
7-8	1988	Bl bur jgl tp bkn	H 5.3 D 4.6	NW 22-1	_____
7-9	2000	Iron tip of goad (?)— cf §45	L 10.5+ W 3	NW 32	_____
"	2004	Torso of Astarte fig	H 6 D 4.4	NW 31-6	III 56: 7
"	2005	Bl bur jgl int	H 6 D 4.9	"	III 70, B: 11
"	2006	Elg 1-ha jgl bf w vt bur bkn	H 12 D 6.5	NW 23 A ₂ Pit	_____
7-4	2008	Wh-bur sau rd slp smkd bkn	H 4.5 D 14.4	NW 22-17	III 24: 21
7-5	2011	Sm jr rd srf	H 7.3 D 7.1	NW 32-2	III 15: 11
7-4	2014	Bt of pi containing bitu- men (wrongly renum- bered 2498)	_____	NW 32-3	_____
"	2019	Bowl rd bf unbur	H 6.9 D 19.4	NW 32-5	III 24: 19
7-8	2022	Min amph lt rd bur slp w rd & bl pntd bds	H 9.8 D 6.1	NW 32-6	III 15: 2; 16: 10
7-11	2025	Green jasper scaraboid	2 x 1.5 x 0.9	NW 32-7	III 60: 11
7-12	2029	Bt bur jgl int	H 6.5 D 5.1	NW 32-12	_____
"	2030	Hd & nk of animal fig	8.5 x 2.7	SE 13 deb	III 58: 15
7-13	2031	Animal fig, hind pt	H 5.5 L 4.8	NW 32-12	_____
"	2032	Do	L 7 W 5.6	"	_____
"	2043	Ined bone inlay	L 2.7 W 1.7	NW 32-13	III 60: 14
"	2046	Pottery spatula in 2 pcs	L 7.8 W 3.4	NW 32-9	_____
7-14	2054	Iron arrowhd	L 7.3 W 1.6	NW 32-13	_____
"	2055	Alabaster dagger pommel	H 2.5 W 3.1	NW 32-12	III 64: 15

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7-5	2069	Pottery rattle int	9.2 x 4.6	SE 23 pit	III 70, B: 18
7-14	2071	Bkn dove fig	H 5.6 x 5.2	NW 32-13	III 58: 16
6-30	2074	2-ha cp rd br bt wg	H 19.2 D 21	NW 22-9	III 19: 11; 71: 10
7-1	2075	Amph w knob ba rd slp tp wg	H 18.8 D 11.6	NW 22-3	III 17: 19
"	2076	Wh-bur sau rd slp	H 4.6 D 14.5	NW 22-9	III 25: 3
7-2	2077	Do	H 4.5 D 14.1	NW 32-6	III 25: 1
7-11	2078	Wh-bur bowl rd slp smkd	H 3.6 D 22.6	NW 32-10	III 22: 13
7-7	2079	1-ha jg rd-bf	H 23.2 D 17.4	SE 12 Cist	III 14: 3; 68: 7; 71: 9
7-9	2080	Do	H 19.4 D 15	SE 23 A pit	III 14: 6; 68: 9; 71: 8
7-12	2082	Wh-bur bowl rd slp	H 9 D 23.8	NW 32-12	III 21: 2
"	2083	Pt of amph w knob ba gr bf	H 14.1 D 11	NW 22-5	IA 18: 4; §55
7-14	2084	Fgmt copper inlay	L 3.6 W 2	NW 32-13	III 28: 4; 64: 7
7-1	2086	Hm jr bf bkn	H 32.4 D 18.5	NW 22-14	III 15: 12; 67: 1; 71: 7
7-2	2088	Bowl ho ined (unbur) lt br bf	H 5.8 D 11.2	NW 32-4	III 25: 2
7-7	2089	Sm wh-bur bowl rd slp	H 5.1 D 14	SE 12 A-2 Cist	III 24: 26
"	2090	Sm bowl rd slp unbur	H 5.6 D 13.4	NW 22-14	III 24: 9
7-9	2093	Lge wh-bur bowl rd slp	H 9.1 D 30.4	NW 31-1	III 20: 1; 68: 3
7-11	2094	Sm bowl gr rd srf no slp	H 4.8 D 14.3	NW 22-4	III 24: 20
"	2095	Unbur bowl creamy gr	H 9 D 24.5	NW 32-10	III 23: 11
7-12	2096	Sm 1-ha jg rgb bf bkn (without parallel)	H 11 D 9.5	NW 32-12	_____
"	2097	Sm 1-ha jg smkd	H 9.3 D 11.2	NW 32-11	III 17: 15
"	2098	Unbur bowl gr bf	H 6.3 D 19.4	NW 32-12	III 24: 17
7-2	2099	Elg 1-ha jgl smkd unbur slt bkn	H 14.7 D 7.7	NW 22-11	_____
7-13	2100	Sm wh-bur bowl rd bf slp bkn	H 9.4 D 17.8	NW 32-12	III 15: 13; 71: 11
7-7	2101	Sm wh-bur bowl rd slp	H 4.5 D 14	NW 32-6	III 24: 25
7-8	2102	Tripod lava mortar	H 10.2 D 13.9	NW	III 29: 16, 16a; 63: 32
7-14	2104	Ivory hair pin w carved end bkn	L 11.7+ D 0.8	NW 32-13	_____
"	2105	Hd Astarte fig w face pntd dk rd	H 6 W 3.9-4.0	"	III 56: 2
7-15	2107	Strip of lead w 2 holes	6.9 x 3.5 x 1	W Tower deb	_____
"	2108	Conoidal pottery seal (B?)	2.2 x 1.9 x 1.8	"	III 60: 9; §18
7-16	2120	Sm block of polished limest	3.2 x 2.7 x 2.5	"	_____
7-18	2132	Conical playing pc	H 2.4 D ba 2.1	NW 32	_____
7-5	2144	1-ha jg bf bkn (prob. B or C)	17.2 x 19.7	SE 14 outside G wall	III 71: 12

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7-13	2148	Unbur pl w flaring lp pntd outside	H 4.3 D 17.7	NW 32-12	III 21: 8
7-14	2149	Lge 4-ha jr rd bf	H 44.1 W 35.9	"	III 13: 1; 67: 5
7-19	2155	Conoidal limest wt	H 3.2 D 4.2	NW 33-1	III 64: 17
7-16}	2165	Bkn steatite "censer"	4.3 x 7.8 x 7	NW 32-13	Bull. 47, fig. 11; 48, p. 1; III 28: 1-3; 59: a, b
7-22{		(2 pcs)			
7-12	2168	Lge 2-ha jr rd bf cpl (B)	H 58.2 D 50.4	NW 22A sub 4	III 12: 10; 66: 1
7-13	2169	Lge 4-ha jr rd bf	H 43.8 D 35.5	NW 32-12	III 13: 4; 67: 4
7-6	2170	Wh-bur lentoid flask bkn	D 27.5	SE 12A Cist	III 16: 11
?	2172	Wh-bur bowl rd slp	H 7.6 D 26.6	NW	III 21: 15
7-11	2173	Elg 1-ha jgl vt bur bkn	H 13.1 D 7.2	NW 32-10	_____
7-12	2174	1-ha jgl rd bf bkn (like 1507)	H 10.4 D 7.7	NW 32-12	_____
"	2175	Wh-bur pl rd slp	H 5 D 18	NW 22-11	III 24: 22
7-13	2176	1-ha jgl rd bf bkn (fm like 2599)	H 8.4 D 6.1	NW 33-12	_____
7-15	2177	2-ha ep rd br	H 21 D 19.8	SE 2 A	III 19: 9
7-19	2178	1-ha jgl rd bf bkn	H 10.1 D 7.6	SE 24 A	_____
"	2182	1-ha jg rd bf	H 14.1 D 14	NW 33-7	III 17: 10; 68: 6
7-20	2186	Copper fibula int	L 6.3 D 2.8	NW 33-9	III 64: 5
7-21	2205	Lava rubbing st	7.2 x 5.1 x 3.4	NW 33-11	III 64: 18
"	2225	Wh-bur bowl rd slp	H 5.4 D 14.3	NW 33-10	III 25: 5
7-11	2228	Elg 1-ha jgl rd bf bkn	H 13.9 D 6.4	NW 32-8	III 18: 16
7-12	2229	Wh-bur bowl rd slp	H 6.7 D 20.7	NW 32-12	III 23: 6
7-13	2230	Lge amph bf tp wg	H 39.7 D 30.4	"	III 13: 6
"	2231	Lge 4-ha jr cpl	H 44.7 D 35	"	III 13: 2
7-22	2239	Conoidal limest wt	H 4.4 D 5.5	NW 33-12	III 64: 14
7-21	2241	Wh-bur bowl rd bf	H 4.7 D 13.9	NW 33-10	III 25: 4
"	2243	Do rd slp	H 4.3 D 17.1	"	III 21: 11
7-22	2244	Elg 1-ha jgl vt bur	H 11.3 D 6.2	"	III 18: 17
7-13	2257	Lge jg bf cpl	H 51.4 D 37	NW 32-12	III 13: 9
7-21	2258	Sm sau rd bf	H 2.2 D 8.6	NW 33-11	III 15: 16
7-13	2259	Lge 4-ha wh-bur bowl rd bf slp	H 11.6 D 28.3	NW 32-2	III 20: 9
7-21	2260	Wh-bur pl rd slp	H 4.4 D 19.4	NW 33-10	III 21: 5; 68: 2; 71: 2
"	2261	Sm bowl srf wg	H 5.1 D 14.8	"	III 24: 8
7-22	2263	1-ha wh-bur dec rd bf lp wg	H 15.2 D 12.3	NW 33-11	III 16: 8; 68: 11
7-13	2265	Lge jr bf bkn	H 48.9 D 37.7	NW 32-12	III 13: 7
7-21	2266	Wh-bur bowl rd slp bkn	H 18.9 D 41.6	NW 33-11	III 20: 16
"	2267	Do	H 9.5 D 23.5	"	III 22: 3
"	2268	Do	H 5.1 D 18	"	III 24: 13
7-12	2269	Hm jr bf bkn	H 33.5 D 21.4	NW E of 22	_____

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7-21	2270	Sm wh bur bowl rd slp	H 5.4 D 13.4	NW 33-10	III 24: 12
"	2271	Do	H 4 D 14.6	"	III 21: 13
"	2273	Do	H 4.3 D 16.7	"	III 21: 12; 68:4
7-22	2274	Sm wh-bur bowl w dk rd slp outside & inside (A)	H 4.8 W 21.8	NW 33-11	III 21:6
7-10	2275	Wh-bur bowl rd slp	H 4.4 D 15.8	NW 33-10	III 24: 7
7-25	2292	Iron spear-hd, end wg	L 12.3 W 3.7	NW 31-13	_____
"	2295	Astarte fig hd wg	H 9.6 W 5.9	NW 32-10	III 55: 10
"	2296	Torso of Astarte fig	H 4.6 W 5.4	SE 33 deb	III 56: 6
"	2300	Faience playing pc	1.2 x 1.0	NW 31-13	III 63: 35
7-27	2307	Iron javelin hd	9+ x 2	NW 33-11	_____
7-25	2308	Bkn spear-hd (2 pcs)	L 8.3+ x W 4.3	NW 31-9	_____
7-27	2313	Hd Astarte fig	H 5.9 x 3.6 x 3	NW 31-11	III 56: 4
"	2316	Bkn bone ear pendant	L 3.4 W 0.9	"	III 64: 4
"	2319	Hd of animal fig	6.2 x 4.5 x 2.9	"	_____
7-21	2327	Wh-bur bowl rd slp	H 5.7 D 18.9	NW 33-10	III 24: 11
7-23	2330	Do	H 7.6 D 21	NW 33-13	III 22: 12
7-25	2331	Do	H 8.2 D 22.6	NW 31-13	III 22: 11
7-21	2332	Do	H 8.4 D 21.5	NW 33-11	III 22: 10
"	2333	Do	H 5 D 16.5	NW 33-10	III 24: 10
"	2334	Unbur bowl br	H 4.8 D 18.4	"	III 21: 10
7-22	2335	2-ha cp br rd	H 15.2 D 14.8	NW 33-11	III 19: 5; 68: 14
7-23	2337	1-ha jg bf	H 18.9 D 15.6	NW 33-10	III 16: 7; 68: 5
7-25	2338	Elg 1-ha jgl rd br	H 14.9 D 6.1	NW 31-13	_____
7-28	2343	Haematite rubbing st	2.3 x 5	NW 32-10	_____
"	2354	Copper st-mason's chisel (B?)	L 11.3 x 2.5 x 1.5	NW 33-14	III 62: 2
7-29	2360	Fgmt bust of Astarte fig	H 4.1 W 5.9	W Tower deb	III 56: 8
"	2372	Lge 4-ha bowl bf bkn	H 25 D 45.8	NW 32-12	III 20: 7; 67: 6
7-25	2373	Lge wh-bur bowl rd slp bkn	H 19.3 D 42.3	NW 33-13	III 20: 11
7-22	2374	Do	H 12.7 D 33	NW 33-11	III 20: 14
"	2375	Elg 1-ha jgl bf incr bkn	H 12.3 D 6.3	NW 33-15	III 17: 6
7-21	2376	Wh-bur sau rd slp bkn	H 4.1 D 14.9	NW 33-10	III 21: 14
7-25	2381	1-ha jg gr-bf	H 16.3 D 14.1	NW 31-13	III 17: 14; 68: 8
7-30	2384	Bkn copper ha (B?)	L 17.2	NW 43-1	III 63: 33
"	2386	Fgmt of iron sickle	L 8.7 W 2.7	NW 31-9	_____
"	2389	St ear pendant	L 5.3 D 1.4	NW 43-1	III 64: 3
"	2395	Fgmt st cosmetic palette	6.8 x 2.4	NW deb	III 64: 16
8-1	2396	Torso Astarte fig	H 10.7 W 5.5	NW 32-12	III 55: 7
7-25	2400	Unbur bowl rd bf bkn	H 8.3 D 21.1	NW 31-13	III 22: 7
8-2	2403	Hd animal fig	H 4.1 W 3.7	NW 31-2	III 58: 12
"	2404	Torso do	H 6.5 W 3.9	NW 32-12	III 58: 13
"	2406	Astarte fig hd wg	H 9.5 W 5.9	NW 31-8	III 55: 6
"	2407	Copper plow point int (B)	L 14.6	NW 32-13	III 62: 1
"	2408	Hollow pottery hd of ape	H 2.6 W 2.7	NW 31-11	_____

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
8-2	2410	Fgmt iron javelin hd	H 4.9 W 1.8	NW 31-10	_____
8-1	2412	Circular bone inlay (B?)	D 3.0	NW 33 sub A-15	III 60: 13
8-2	2414	Rnd lead plummet (?)	2.7 x 2.2	NW 31-10	_____
"	2415	Bkn iron chisel	L 10.7	"	_____
"	2417	Iron needle end bkn	L 9.4	"	_____
"	2419	Iron needle int	L 7.8	NW 31-2	_____
7-6	2422	1-ha jg rd bf tp wg (like 1508)	H 23.2 D 18.6	SE 12 Cist	_____
7-25	2426	Wh-bur bowl gr bf bkn	H 18.7 D 48	NW 32-13	III 22: 6
"	2427	Unbur bowl rd bf bkn	H 13.1 D 30.4	NW 31 13	III 20: 4
8-4	2435	Torso Astarte fig	H 5.5 W 7	W Tower deb	_____
"	2443	Limest scaraboid (B?)	1.7 x 1.5 x 0.9	NW 43-3	III 60: 7
8-5	2445	Fgmt iron javelin hd	L 8.7 W 2.2	NW 32-10 Cist	_____
"	2446	2 pcs copper inlay bkn & bent	3.3 x 2.7 etc	NW 33-2 Cist	_____
"	2449	Hd animal fig	5.1 x 4.3	NW 32-10 Cist	III 58: 14
"	2450	Hd Astarte fig	3.9 x 3.4	"	III 56: 5
8-2	2452	Wh-bur bowl rd slp	H 9.5 D 24.4	NW 31-10	III 22: 5
7-21	2453	Unbur bowl bf	H 7.1 D 20.4	NW 33-10	III 23: 10
"	2454	Do	H 9.1 D 22.3	"	III 23: 2
7-12	2456	Wh bur bowl rd bf	H 9.9 D 27.5	NW 32-10	III 20: 13
7-21	2461	Unbur bowl gr	H 7.5 D 22.7	NW 33 A-11	III 23: 7
7-23	2464	Wh bur bowl rd slp	H 11.4 D 32.1	NW 33-13	III 20: 6
"	2465	4-ha pi gr bf cpl	H 62.1 D 39.8	"	III 13: 3; 68: 1
7-25	2466	Wh-bur bowl rd slp	H 6.8 D 18.6	NW 31-10	III 24: 15
7-28	2467	Do	H 5.9 D 14.2	NW 32-10	III 25: 10
"	2468	Do	H 5.6 D 17.5	"	III 21: 9
8-1	2469	Do	H 7.7 D 24.4	NW 33-15	III 23: 1
"	2470	Do	H 4.6 D 15.4	_____	III 25: 17; 71: 5
"	2471	Unbur bowl rd bf	H 5.9 D 15.1	NW 33-15	III 24: 6
"	2472	Wh-bur bowl rd slp	H 5.8 D 18.1	"	III 25: 20
"	2473	Do	H 7.1 D 18.2	"	III 23: 3
"	2474	Do	H 5.1 D 12.9	"	III 25: 9
8-2	2475	Do	H 9.3 D 23.7	NW 31-10	III 22: 4
"	2476	1-ha jg smkd	H 15.4 D 14.1	"	III 17: 8
8-5	2484	Bt faience Bes amulet	H 1.5 W 1.7	W Tower	III 63: 34
7-25	2490	2-ha cp smkd bkn	H 14.9 D 14.6	NW 31-7	III 19: 8
7-29	2491	Wh-bur bowl rd slp	H 9.4 D 23.6	NW 32-10	III 22: 1
"	2492	Do	H 12.6 D 34.1	NW 32-12	III 20: 7
8-1	2493	Do	H 5.1 D 15.7	NW 33-15	III 25: 14
"	2494	Do	H 4.5 D 15.7	"	III 25: 15
8-2	2495	Do bkn	H 9.8 D 23.6	NW 31-11	III 22: 8
"	2496	Do	H 8.8 D 23.7	NW 31-10	III 22: 9
"	2497	Do	H 8.3 D 23.8	NW 31-11	III 23: 5
7-4	2503	2-ha cp rd bf bt wg	H 20.4 D 21.8	NW 32-3	_____

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
8-1	2504	Wh-bur bowl rd slp bkn	H 6.1 D 19.2	NW 33-15	III 25: 23
8-2	2505	Do	H 19.8 D 44.2	NW 31-10	III 20: 10
8-1	2506	Do	H 5.6 D 18.7	NW 33-15	III 25: 24
"	2507	Do	H 4.9 D 15.6	"	III 24: 5
"	2508	Do	H 5.5 D 17.8	"	III 25: 22
8-2	2509	Lentoid flask rd bf bkn	H 37.4 D 29.1	NW 31-10	III 16: 12
8-1	2510	Unbur bowl rd slp	H 4.5 D 15.6	NW 33-15	III 25: 18
"	2511	1-ha jg rd bf	H 23.4 D 17.1	"	III 14: 5
8-2	2512	2-ha cp rd br (A ₁)	H 22.7 D 38.8	NW 31-sub 10	III 19: 2
7-21	2514	2-ha cp rd br	H 22 D 21.3	NW 33-10	III 19: 10
8-1	2515	Sm 1-ha jg rd bf bkn	H 10 D 11.4	NW 32-15 (not in cache)	III 17: 11
8-2	2516	Wh-bur bowl rd bf bkn	H 18.5 D 46	NW 31-10	III 20: 8
7-22	2519	Wh-bur bowl bkn	H 6.2 D 15.0	NW 33-11	III 24: 14
8-1	2520	Wh-bur bowl rd slp	H 4.1 D 14.3	NW 33-15	III 25: 27
"	2521	Do	H 5.5 D 13.3	"	III 25: 16
"	2522	Do	H 5.1 D 18.1	"	III 25: 26
8-5	2523	Do (A ₂)	H 9.1 D 23.4	NW 22-sub 9	III 22: 2
7-13	2524	Lge amph rd bf tp wg	38 x 37	NW 32-12	III 13: 5
8-10	2535	Lge cyl. paste bead (date?)	L 3 D 2	NW deb	_____
8-12	2537	Sm cyl paste bead	1.4 x 0.5	NW 32-12 Cist	_____
8-10	2539	Iron javelin hd	9.6 x 2.7	NW 31-11	_____
8-2	2546A	Pottery rattle bkn	8.3 x 6.5	NW 31-10	III 70, B: 17
"	2547	Do	8+ x 6.5	NW 31-8	III 70, B: 16
7-29	2548	Astarte fig hd wg	9+ x 6.3	NW 32-12	III 55: 9
"	2552	Limest jr stopper	10 x 6.5	W Tower	_____
8-13	2554	Bone ear pendant int	6 x 0.9	NW 32-10 Cist	III 64: 2
"	2555	Rd carnelian bead	0.7 x 0.8	"	III 63: 37
"	2556	Do	0.7 x 0.6	"	III 63: 38
8-4	2572	Elg 1-ha jgl rd bf	H 14.3	NW 33-9	III 18: 24; 70, A: 8
7-23	2573	Do vt bur	H 13.1	NW 33-13	III 18: 25
8-5	2574	Animal vs white slp pnt.	L 12	NW 32-12 Cist	III 15: 14
8-1	2576	1-ha jgl bf unbur	H 11	NW 33-15	III 18: 11; 70, A: 12
8-5	2577	Do vt bur	H 9.6+	NW 22-9	III 18: 10
7-21	2578	1-ha jgl br bf vt bur	H 10	NW 33-10	III 18: 12; 70, A: 10
8-2	2580	Bl bur jgl	H 6.9	"	III 18: 6; 70, B: 6
"	2581	Do	H 6.7	"	III 18: 7; 70, B: 9
"	2582	Do	H 6.1	"	III 18: 3; 70, B: 15
7-13	2583	Do	H 6.9	NW 32-12	III 18: 5; 70, B: 10

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
—	2584	Do	H 7.2	NW 32-A	III 18: 9; 70, B: 8
8-1	2586	Sm wh-bur bowl rd slp	D 13.5	NW 33-15	III 25: 8
7-29	2587	Do	D 13	NW 32-12 Cist	III 25: 13
"	2588	Do (very skew)	D 13	"	III 25: 12
8-2	2589	1-ha jg bf smkd	H 16.5	NW 31-10	III 17: 12
8-1	2590	Sm 1-ha jg pk bf slt bkn	H 9.1	NW 33-15	III 17: 9; 69, A: 3
"	2591	Do	H 9.8	"	III 17: 13; 69, A: 2
8-4	2592	Elg 1-ha jgl w vt bur on rd slp (A ₁)	H 13.9	NW 32-12 Cist	III 18: 20; 70, A: 1
—	2593	Tip of 3-ha jr w false spt rd bf	H 12.7	NW 32-10	III 15: 17
8-1	2594	1-ha jgl vt bur pk bf	H 12.3	NW 33-15	III 18: 14
"	2595	Elg 1-ha jgl rd slp vt bur	H 14.3	"	III 17: 1; 70, A: 9
"	2596	Do w creamy bf slp	H 12.2	"	III 17: 2; 70, A: 7
"	2597	Do w rd slp	H 14.2	"	III 17: 4; 70, A: 4
"	2598	Elg 1-ha jgl rd slp unbur	H 14.2	NW 33-15	III 17: 3; 70, A: 5
8-2	2599	Elg 1-ha jgl vt bur slt bkn	H 13.6	NW 31-10	III 18: 30
"	2600	Sm 1-ha jg rd br srf	H 13.6	"	III 16: 4; 69, A: 6
"	2601	Do	H 12.8	NW 31-8	III 16: 3; 69, A: 4
7-20	2603	Wh-bur pl rd slp	D 17	NW 33-10	III 21: 4
8-2	2607	Pointed amph rd br slt bkn	H 19.7	NW 31-10	III 17: 16; 69, A: 8
"	2608	Sm 1-ha pot rd bf smkd	H 10.1	NW 31-11	III 17: 7; 69, A: 1
8-1	2609	Elg 1-ha jgl rd bf vt bur	H 12.5	NW 33-15	III 17: 5; 70, A: 6
"	2610	Squat 1-ha jgl do	H 10.0	"	III 18: 13; 70, A: 11
8-2	2612	Min amph rd br bur slp w bl bds slt bkn	H 5.6	NW 31-10	III 15: 4
8-5	2614	Elg 1-ha jgl rd bf vt bur (A ₁ ?)	H 13.2	NW 32-10 Cist	III 18: 22; 70, A: 2
8-4	2615	1-ha jg bf	H 24	sub 33-9	III 14: 1
8-5	2616	Sm 1-ha jg bur rd slp bkn (A ₁ ?)	H 12	NW 32-10 Cist	III 16: 5
—	2618	Iron II lamp	D 16	NW	III 15: 7
7-6	2619	Iron I lamp, creamy bf w rd br pntd rm (B)	D 15	NW 22 sub-14	III 12: 6; IA, p. 87, fig. 3: d; §56

<i>Date</i>	<i>S. N.</i>	<i>Description</i>	<i>Size</i>	<i>Provenience</i>	<i>Reference</i>
8-11	2621	Elg 1-ha jgl rd bf vt bur (A ₁ ?)	H 13	NW 32-12 Cist	III 18: 23; 70, A: 3
7-22	2623	Bl bur jgl int	H 6	NW 33-11	III 18: 2; 70, B: 5
8-1	2624	Do	H 6.5	NW 33-15	III 18: 8; 70, B: 3
7-22	2625	Do	H 6.2	NW 33 N of W Tower	III 18: 4; 70, B: 2
7-30	2626	Sm 1-ha jgl w rd srf	H 12	N wall of tell	III 18: 15
8-2	2627	Sm wh-bur bowl br bf	D 13	NW 31-10	III 25: 11
7-25	2629	Unbur bowl rd bf	D 25.7	NW 31-13	III 23: 9
8-10	2635	Bl bur jgl	H 7.2	NW 31-10	III 18: 1; 70, B: 12
"	2636	2-ha ep rd br	H 15.3	NW 31-6	III 19: 7; 69, A: 5
8-2	2638	Pointed amph lt rd br smkd tp wg	H 18.1+	NW 31-10	III 17: 17; 69, A: 7
7-9	2640	Bl bur pyxoid (B)	H 7.5+	NW 31-1	III 12: 5
8-1	2642	Iron II lamp int	D 14	NW 33-15	III 15: 6; 69, B: 3
"	2643	Do	D 13.2	"	III 15: 8; 69, B: 4
"	2644	Do	D 15	"	III 15: 9; 69, B: 5
no date	2645	Do	D 13.6	NW 33-10	III 15: 10; 69, B: 6
8-10	2650	Elg 1-ha jgl rd bf vt bur bkn	H 14	NW 31-10	III 18: 27
8-2	2653	Sm 1-ha jg rd slp bkn	H 12	"	III 16: 2
7-21	2654	Iron II lamp	D 9.5	NW 33-10	III 15: 5
no date	2655	Iron II lamp	D 13.5	NW 33-12	III 69, B: 2
7-29	2656	Do	D 12	NW 32-12	III 69, B: 8
8-1	2657	Do	D 12	NW 33-15	III 69, B: 9
7-21	2658	Do	D 12	NW 33-10	III 69, B: 11
8-2	2659	Do	D 12	NW 31-11	III 69, B: 7
no date	2660	Do, bkn	D 12.5	NW 32-10	—
8-1	2661	Do	D 12.5	NW 33-15	—
"	2662	Do int	D 12	"	III 69, B: 10
"	2663	Do	D 12	"	III 69, B: 1
"	2664	Do, bkn	D 12	NW 31-8	—
no date	2665	Do	D 13	NW 33-15	—
8-2	2669	Bl bur jgl	H 6.3	NW 31-10	III 70, B: 7
6-30	2700	Do	H 6.2	NW 23	III 70, B: 14
no date	2701	1-ha jgl lt br	H 6.9	—	III 70, B: 4
7-16	2702	Do	H 6	W Tower deb	III 70, B: 13
7-4	2703	Smooth st w inced fig	H 20.7	—	III 65: 2

W 26.5 Th 20

APPENDIX III

SOME HOMOGENEOUS LOCUS GROUPS FROM STRATUM A

(The pieces listed in each locus above the line are fully reproduced in T.B.M. All loci belong to the end of Stratum A except NW 33 A-15, which is a little earlier.)

SE 4 A-2 (all 7-21)					
1243	1252	1256	1262	1335	1357
1244	1253	1257	1265	1336	1358
1247	1254	1258	1295	1337	1364
1250	1255	1261	1297	1347	
<hr/>					
1245	1249	1269	1271	1279	1282
1246	1264	1270	1278	1280	1359
1248	1266				
SE 4 A-3 (all 7-9)					
1005	1006	1007	1008	1012	1013
<hr/>					
1001	1004	1019	1022		
SE 12 A-7 (all 7-9)					
1030	1031	1032	1133	1071	
SE 13 A-5 (all 7-9)					
1009	1027	1029	1092	1094	1098
1010	1028	1065			
<hr/>					
1016	1024				
SE 23 A-4 (all 4-12/13)					
358	359	364	382	395	
<hr/>					
355	360	379	383	385	391
356	370				
SE 33 A-10 (all 4-6/7)					
259	260	273	283		
<hr/>					
261	265	271	275	279	282
262	266	272	277	280	290
263	268	274	278	281	291
264	270				
SE 41 A-6 (all 5-24/6)					
148	154	157	170	172	152

SE 50 A-3 (all 5-8/10/11)					
50	53	54	57	68	
43	49	55	59	67	70
44	51	56	64	69	71
45	52	58	65		
SE 50 A-5 (all 5-26/27)					
168	173	175	178		
162	164	165	177	179	180
SE 51 A-11 (all 5-18/19/20/21/22)					
93	99	105	109	114	133
94	102	107	112	121	134
98	104	108	113	132	139
83	103	115	118	136	143
97	106	116	120	137	144
101	111	117	125	138	
NW 12 A-6 (all 8-4/5)					
1505	1519	1527	1528	1530	1558
1506	1512	1517	1520		
NW 22 A-9 (6-30/7-1)					
1834	1835	1861	1904	2074	2076
NW 31 A-13 (all 7/25)					
2292	2331	2338	2381	2400	2427
2300					
NW 33 A-10 (all 7-21)					
2210	2245	2271	2333	2453	2578
2225	2260	2273	2334	2454	2654
2241	2261	2327	2376	2514	2658
2243	2270				
NW 33 A-15 (cache)-(all 8-1)					
2469	2494	2515	2590	2598	2644
2470	2504	2520	2591	2609	2657
2471	2506	2521	2594	2610	2661
2472	2507	2522	2595	2624	2662
2473	2508	2576	2596	2642	2663
2474	2510	2586	2597	2643	2665
2493	2511				

APPENDIX IV

SERIAL NUMBERS OF OBJECTS FROM TELL BEIT MIRSIM IN THE PALESTINE MUSEUM

(Remaining numbers either in Pittsburgh-Xenia Museum or discarded)

1926-1928 Campaigns

Stratum A: Nos. 8, 31, 45, 49, 73, 82, 86, 92, 102, 121, 128, 129, 135, 139, 201, 224, 236, 247, 248, 249, 259, 269, 273, 277, 295, 323, 334, 342, 352, 353, 368, 372, 388, 390, 397, 404, 437, 454, 455, 464, 469, 512, 515, 529, 557, 559, 561, 564, 593, 615, 699, 709, 743, 750, 809, 822, 831

Stratum B: Nos. 184, 430, 506, 627, 645

Stratum C: Nos. 185, 186, 545, 639, 657

Stratum D: Nos. 754, 758, 760, 762, 787, 798, 801

1930 Campaign

Stratum A: Nos. 833, 851, 859, 862, 864, 873, 875, 877, 878, 880, 899, 903, 909, 913, 1009, 1018, 1032, 1039, 1049, 1070, 1081, 1106, 1134, 1136, 1173, 1184, 1193, 1223, 1226, 1251, 1254, 1257, 1258, 1261, 1262, 1270, 1271, 1310, 1338, 1358, 1364, 1519, 1553, 1555, 1585

Stratum B: Nos. 1079, 1187, 1199, 1216, 1230, 1239, 1263, 1267, 1268, 1276, 1330, 1354, 1356, 1407, 1445, 1450, 1501, 1509, 1536, 1544

Stratum C: Nos. 1287, 1325, 1333, 1339, 1354, 1366, 1367, 1374, 1378, 1381, 1389, 1394, 1395, 1397, 1401, 1403, 1408, 1409, 1415, 1428, 1429, 1437, 1442, 1447, 1460, 1465, 1470, 1474, 1485, 1489, 1500, 1597, 1615, 1642

Stratum D: Nos. 837, 840, 1212, 1546, 1547, 1548, 1571, 1572, 1578, 1579, 1580, 1584, 1587, 1598, 1599, 1622, 1628

Stratum F: No. 900

Stratum G: No. 920

Stratum H: Nos. 1014, 1015

1932 Campaign

Nos. 1666, 1668, 1672, 1704, 1722, 1725, 1733, 1743, 1765, 1783, 1788, 1796, 1802, 1805, 1806, 1831, 1832, 1849, 1876, 1885, 1892, 1895, 1899, 1913, 1914, 1933, 1934, 1935, 1943, 1955, 1963, 1970, 1972, 1990, 2007, 2016, 2017, 2021, 2024, 2030, 2042, 2050, 2056, 2063, 2066, 2071, 2085, 2105, 2107, 2140, 2141, 2147, 2148, 2151, 2154 (2), 2156 (1), 2164, 2165, 2168, 2169, 2171, 2180, 2181 (2), 2185, 2186, 2210, 2225, 2232, 2240, 2241, 2244, 2249 (3), 2272, 2277 (2), 2282, 2290, 2297, 2301, 2303, 2313, 2314, 2348, 2357, 2358, 2383, 2397, 2406, 2408, 2414, 2417, 2418, 2425, 2429, 2431, 2442, 2450, 2452, 2458, 2460, 2487, 2488 (3), 2513, 2538, 2541, 2558, 2566, 2569, 2571, 2592, 2602, 2611, 2617, 2628, 2633, 2640, 2641, 2642, 2647, 2666, 2703

INDEX OF OBJECTS IN THE PLATES OF VOL. III

Pl. 12: 1-10 (§ 22)

SN: 1 = SE 14-B, (6-17-32), 2 = 2146, 3 = Silo, SE 23, (7-19-32), 4 = SE 13 B (6-22-32), 5 = 2640, 6 = 2619, 7 = 2171, 8 = SE 3-B, (6-27-32), 9 = 2141, 10 = 2168

Pl. 13: 1, 2, 4 (§ 147), 3, 5-9 (§ 146)

SN: 1 = 2149, 2 = 2231, 3 = 2465, 4 = 2169, 5 = 2524, 6 = 2230, 7 = 2265, 8 = NW 33 A 11, (7-21-32), 9 = 2257

Pl. 14: 1-6 (§ 150)

SN: 1 = 2615, 2 = 1842, 3 = 2079, 4 = 1740, 5 = 2511, 6 = 2080

Pl. 15: 1-4 (§ 157), 12 (§ 149), 14 (§ 51), 17 (§ 148)

SN: 1 = 1834, 2 = 2022, 3 = NW 31 (7-25-32), 4 = 2612, 5 = 2654, 6 = 2642, 7 = 2618, 8 = 2643, 9 = 2644, 10 = 2645, 11 = 2011, 12 = 2086, 13 = 2100, 14 = 2574, 15 = SE 13, grain pit of A₂ (6-23-32), 16 = 2258, 17 = 2593

Pl. 16: 1-5 (§ 151), 6, 8 (§ 152), 7, 9 (§ 150), 10-12 (§ 159)

SN: 1 = 1748, 2 = 2653, 3 = 2601, 4 = 2600, 5 = 2616, 6 = 1836, 7 = 2337, 8 = 2263, 9 = Cistern of SE 12-A (7-6-32), 10 = NW 31 A-13 (7-25-32), 11 = 2170, 12 = 2509

Pl. 17: 1-6 (§ 153), 7-15 (§ 154), 16-19 (§ 156)

SN: 1 = 2595, 2 = 2596, 3 = 2598, 4 = 2597, 5 = 2609, 6 = 2375, 7 = 2608, 8 = 2476, 9 = 2590, 10 = 2182, 11 = 2515, 12 = 2589, 13 = 2591, 14 = 2381, 15 = 2097, 16 = 2607, 17 = 2638, 18 = NW 22-A 11, (6-30-32), 19 = 2075

Pl. 18: 1-9 (§ 158), 10-30 (§ 153)

SN: 1 = 2635, 2 = 2623, 3 = 2582, 4 = 2625, 5 = 2583, 6 = 2580, 7 = 2581, 8 = 2624, 9 = 2584, 10 = 2577, 11 = 2576, 12 = 2578, 13 = 2610, 14 = 2594, 15 = 2626, 16 = 2228, 17 = 2244, 18

= 1911, 19 = 1835, 20 = 2592, 21 = 1744, 22 = 2614, 23 = 2621, 24 = 2572, 25 = 2573, 26 = 1841, 27 = 2650, 28 = NW 31 A 11, (8-2-32), 29 = 1749, 30 = 2599

Pl. 19: 1-11 (§ 155)

SN: 1 = 1746, 2 = 2512, 3 = Silo 62 A₁, (6-18-32), 4 = 33 A 11, (7-21-32), 5 = 2335, 6 = Cistern of SE 12 A, (7-6-32), 7 = 2636, 8 = 2490, 9 = 2177, 10 = 2514, 11 = 2074

Pl. 20: 1-18 (§ 160)

SN: 1 = 2093, 2 = NW 32 A 12, (7-12-32), 4 = 2427, 6 = 2464, 7 = 2372, 8 = 2516, 9 = 2259, 10 = 2505, 11 = 2373, 12 = NW 33, sub A 13, (8-10-32), 13 = 2456, 14 = 2374, 15 = 1915, 16 = 2266, 17 = 2492, 18 = NW 22 A, (6-30-32)

Pl. 21: 1-15 (§ 160)

SN: 1 = 1904, 2 = 2082, 3 = Cache, NW pit of 33 A 15, (8-1-32), 4 = 2603, 5 = 2260, 6 = 2274, 7 = NW 33 A 11, (7-21-32), 8 = 2148, 9 = 2468, 10 = 2334, 11 = 2243, 12 = 2273, 13 = 2271, 14 = 2376, 15 = 2172

Pl. 22: 1-14 (§ 160)

SN: 1 = 2491, 2 = 2523, 3 = 2267, 4 = 2475, 5 = 2452, 6 = 2426, 7 = 2400, 8 = 2495, 9 = 2496, 10 = 2332, 11 = 2331, 12 = 2330, 13 = 2078, 14 = 1958

Pl. 23: 1-14 (§ 160)

SN: 1 = 2469, 2 = 2454, 3 = 2473, 4 = 1959, 5 = 2497, 6 = 2229, 7 = 2461, 8 = NW 31 A 11, (8-2-32), 9 = 2629, 10 = 2453, 11 = 2095, 12 = 1954, 13 = NW 32 A 10, 14 = NW 31 A 10, (8-2-32)

Pl. 24: 1-27 (§ 160)

SN: 1 = NW pit of 33 A 15, (8-1-32), 2 = NW pit of 33 A 15, (8-1-32), 3 = NW pit of 33 A 15, (8-1-32), 4 = NW pit of 33 A 15, (8-1-32), 5 = 2507,

- 6 = 2471, 7 = 2275, 8 = 2261, 9 = 2090, 10 = 2333, 11 = 2327, 12 = 2270, 13 = 2268, 14 = 2519, 15 = 2466, 16 = NW 32 A 2, (7-4-32), 17 = 2098, 18 = NW 33 A 11, (7-21-32), 19 = 2019, 20 = 2094, 21 = 2008, 22 = 2175, 23 = 1743, 24 = 1739, 25 = 2101, 26 = 2089, 27 = NW 33 A 11, (7-21-32)
- Pl. 25: 1-27 (§ 160)
 SN: 1 = 2077, 2 = 2088, 3 = 2076, 4 = 2241, 5 = 2225, 6 = 1860, 7 = 1861, 8 = 2586, 9 = 2474, 10 = 2467, 11 = 2627, 12 = 2588, 13 = 2587, 14 = 2493, 15 = 2494, 16 = 2521, 17 = 2470, 18 = 2510, 19 = NW 33 A 15, (7-29-32), 20 = 2472, 21 = NW 33 A, sub 15, (8-1-32), 22 = 2508, 23 = 2504, 24 = 2506, 25 = NW pit of 33 A 15, (8-1-32), 26 = 2522, 27 = 2520
- Pl. 26: A. 1-8 (§ 160)
 SN: 1 = 111, 2 = 30, 4 = 88, 6 = 117, 7 = 115, 8 = 78
 B. 1-15 (§ 153), 3 (§ 11)
 SN: 1 = 137, 2 = 27, 3 = 28, 4 = 69, 5 = 138, 6 = 2, 7 = 151, 8 = 143, 9 = 125, 10 = 82, 11 = 52, 12 = 83, 13 = 177, 14 = 81, 16 = 124, 17 = NW 31 A 10 (8-2-32), 18 = 1594
- Pl. 27: A. 1-8
 B. 1-2 (§ 51), 3-9 (§ 48)
 SN: 1 = 1554, 2 = 1022, 3 = 1108, 4 = 862, 5 = 1555, 6 = 861, 7 = 1269, 8 = 983, 9 = 1081
- Pl. 28: 1-3 (§ 42), 4 (§ 47), 5, 6 (§ 29 n)
 SN: 1 = 2165, 2 = 2165, 3 = 2165, 4 = 2084, 5-6 = unr.
- Pl. 29: 1-5 (§§ 14, 15), 7 (§ 18), 8, 10 (§ 43), 11 (§ 50), 12, 12 a (§ 41), 13 (§§ 18, 49), 14 (§ 51), 15, 15 a (§ 52), 16, 17 (§ 54)
 SN: 1 = 1386, 1a = 1386, 2 = 1229, 3 = 1333, 4 = 1239, 5 = 1281, 6 = 623, 7 = 1407, 8 = 580, 8a = 580, 9 = 623, 10 = 867, 11 = 1226, 12 = 1803, 12a = 1803, 13 = 869, 14 = 874, 15 = 403, 15a = 403, 16 = 2102, 16a = 2102, 17 = 1593
- Pl. 30: 1-5 (§ 48), 6, 7 (§ 54)
 SN: 1 = 519, 2 = 703, 3 = 704, 4 = 521, 5 = 520, 6 = 122, 7 = 32
- Pl. 31: 6, 7 (§ 41)
 SN: 1 = 881, 2 = 986, 3 = 1383, 4 = 1228, 5 = 1544, 6 = 1468, 7 = 1282, 8 = 1119, 9 = 1329, 10 = 988, 11 = 1328, 12 = 1019, 13 = 909, 14 = 1332, 15 = 908
- Pl. 32: 1-3, 5, 7 (§ 50), 4, 6, 12-13 (§ 52), 8-11, 14 (§ 53), 15, 16 (§ 49), 17 (§§ 13, 101), 18-22 (§ 21), 20 (§ 20)
 SN: 1 = 670, 2 = 656, 3 = 669, 4 = 489, 5 = 582, 6 = 818, 7 = 435, 8 = 12, 9 = 419, 10 = 581, 11 = 214, 12 = 268, 13 = 494, 14 = 544, 15 = 426, 16 = 522, 17 = 500, 18 = 496, 19 = 495, 20 = 501, 21 = 811, 22 = 196
- Pl. 33: a (§ 10)
 Pl. 34: a-b (§ 31)
 Pl. 35: a-d (§ 31)
 Pl. 36: a (§§ 27, 29)
 b (§ 27)
 Pl. 37: a-b (§ 27)
 Pl. 38: a-b (§ 27)
 Pl. 39: a-b (§ 27)
 Pl. 40: a-b (§ 27)
 Pl. 41: a (§§ 6, 10)
 b (§ 6)
 c (§ 5)
 Pl. 42: a (§§ 6, 10, 33)
 b (§§ 6, 33)
 Pl. 43: a (§§ 33, 36)
 b (§ 33)
 Pl. 44: a-b (§ 33)
 c (§§ 33, 54)
 d (§§ 27, 33)
 Pl. 45: a (§§ 33, 38)
 b (§ 33)
 Pl. 46: a-c (§ 33)
 d (§§ 27, 30, 33)
 Pl. 47: a-b, d (§§ 2, 33)
 c (§ 33)
 Pl. 48: a (§ 9 n)
 b (§ 33)
 Pl. 49: a-b (§ 38)
 Pl. 50: a-b (§ 39)

- Pl. 51: a (§ 34 n)
 b (§ 33)
 c-d (§ 36)
- Pl. 52: a-b (§ 36)
- Pl. 53: a-b (§ 36)
- Pl. 54: A: 1-3 (§ 124), 6 (§ 132), 7 (§ 137)
 B: 1-12
 SN: 1 = 909, 2 = 1332, 3 = 1228, 4 = 908, 5 = 1328, 6 = 881, 7 = 986, 8 = 1019, 9 = 1282, 10 = 1119, 11 = 988, 12 = 1329
- Pl. 55: 1-3 (§ 12), 4, 5 (§ 15), 12 (§ 50), 13 (§ 16)
 SN: 1 = 1227, 2 = 1120, 3 = 1208, 4 = 1333, 5 = 1229, 6 = 2406, 7 = 2396, 8 = 1804, 9 = 2548, 10 = 2295, 11 = 1805, 12 = 1226, 13 = 439
- Pl. 56: 3 (§ 41)
 SN: 1 = 1808, 2 = 2105, 3 = 1803, 4 = 2313, 5 = 2450, 6 = 2296, 7 = 2004, 8 = 2360, 9 = 1817
- Pl. 57: A. 1-5 (§ 48), B. 1 (§ 52), 2-4 (§ 50), 5-6 (§ 53), C. 3 (§ 41), D. 1-2 (§ 44), 3 (§ 54)
 SN: A. 1 = 521, 2 = 520, 3 = 704, 4 = 703, 5 = 519
 B. 1 = 489, 2 = 656, 3 = 669, 4 = 670, 5 = 214, 6 = 12
 C. 1 = 193, 2 = 523, 3 = 527, 4 = 264, 5 = 543, 6 = 29, 7 = 84
 D. 1 = 147, 2 = 159, 3 = 32, 4 = 94, 5 = 93
- Pl. 58: 1-16 (§ 51)
 SN: 1 = 1554, 2 = 1022, 3 = 1531, 4 = 890, 5 = 1066, 7 = 1382b, 8 = 1235, 9 = 1234, 10 = 1189, 11 = 1718, 12 = 2403, 13 = 2404, 14 = 2449, 15 = 2030, 16 = 2071
- Pl. 59: a-b (§ 42)
 SN: = 2165
- Pl. 60: 1 (§ 17), 2 (§ 36), 2-6 (§ 43), 7, 9 (§ 18), 10, 13 (§ 19), 11 (§ 49), 12, 14 (§ 52)
 SN: 1 = 1321, 2 = 473, 3 = 668, 4 = 1385, 5 = 873, 6 = 1071, 7 = 2443, 8 = 623, 9 = 2108, 10 = 1431, 11 = 2025, 12 = 403, 13 = 2412, 14 = 2043
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 SN: 1 = 678, 2 = 681, 3 = 672, 4 = 679, 5 = 680, 6 = 832, 7 = 659, 8 = 405, 9 = 620, 10 = 468, 11 = 417, 12 = 938A, 13 = 1185, 14 = 1184, 15 = 1231, 16 = 1279, 17 = 1278, 18 = 858, 19 = 1209, 20 = 1626, 21 = 1151
- Pl. 62: 1-10 (§ 20), 9, 12-15 (§ 55)
 SN: 1 = 2407, 2 = 2354, 3 = 1275, 4 = 1230, 5 = 1236, 6 = 1079, 7 = 1276, 8 = 1178, 9 = 865, 10 = 477, 11 = 554, 12 = 1270, 13 = 1080, 14 = 1322, 15 = 1037
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 SN: 1 = 1401, 2 = 1214, 3 = 1320, 4 = 937, 5 = 1513, 6 = 1382, 7 = 1020, 8 = 959, 9 = 1109, 10 = 961, 11 = 1617, 12 = 1553, 13 = 1618, 14 = 960, 15 = 864, 16 = 1070, 17 = 1049, 18 = unr., 19 = 1141, 20 = 982, 21 = 1510, 22 = 431, 23 = 276, 24 = 194, 25 = 540, 26 = 583, 27 = 538, 28 = 370, 29 = 691, 30 = 698, 31 = 537, 32 = 2102, 33 = 2384, 34 = 2484, 35 = 2300, 36 = 2546, 37 = 2555, 38 = 2556, 39 = 1112, 1113, 40 = 849, 41 = 857
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- Pl. 65: 1-3 (§ 55)
 SN: 1 = 1362, 2 = 2703, 3 = unr.
- Pl. 66: 2-4 (§ 22), 3-4 (§ 9)
 SN: 1 = 2168, 2 = 2141, 3 = 2141, 4 = 2146
- Pl. 67: 1-3 (§ 149), 4-5 (§ 147)
 SN: 1 = 2086, 2 = unr., 3 = unr., 4 =

2169, 5 = 2149, 6 = 2372, 7 = 1147,
8 = 1149

Pl. 68: 1 (§ 146), 2-4 (§ 160), 5-9 (§ 150),
10, 13 (§ 157), 11-12 (§ 152), 14
(§ 155)

SN: 1 = 2465, 2 = 2260, 3 = 2093, 4
= 2273, 5 = 2337, 6 = 2182, 7 = 2079,
8 = 2381, 9 = 2080, 10 = 2022, 11 =
2263, 12 = 1836, 13 = 1834, 14 = 2335,
15 = 1748

Pl. 69: A. 1-3 (§ 154), 5 (§ 155), 7-8
(§ 156)

SN: 1 = 2608, 2 = 2591, 3 = 2590, 4
= 2601, 5 = 2636, 6 = 2600, 7 = 2638,
8 = 2607

B. 1-11 (§ 161)

SN: 1 = 2663, 2 = 2655, 3 = 2642, 4
= 2643, 5 = 2644, 6 = 2645, 7 = 2659,

8 = 2656, 9 = 2657, 10 = 2662, 11 =
2658

Pl. 70: A. 1-2 (§ 153)

SN: 1 = 2592, 2 = 2614, 3 = 2621, 4
= 2597, 5 = 2598, 6 = 2609, 7 = 2596,
8 = 2572, 9 = 2595, 10 = 2578, 11 =
2610, 12 = 2576

B. 1-15 (§ 158)

SN: 1 = NW-12-A-10, 2 = 2625, 3 =
2624, 4 = 2701, 5 = 2623, 6 = 2580, 7
= 2669, 8 = 2584, 9 = 2581, 10 =
2583, 11 = 2005, 12 = 2635, 13 = 2702,
14 = 2700, 15 = 2582, 16 = 2547, 17
= 2546, 18 = 2069

Pl. 71: 1-6 (§ 160), 7 (§ 149), 10 (§ 155)

SN: 1 = unr., 2 = 2260, 3 = 1959, 4
= 1958, 5 = 2470, 6 = unr., 7 = 2086,
8 = 2080, 9 = 2079, 10 = 2074, 11 =
2100, 12 = 2144, 13 = 2081

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house, II, 24, 40, III, 2 f., 5, 8 (n. 6),
24, 34
Wampler, J. C., III, 153 n, 157 n
Ward, W. H., III, 18

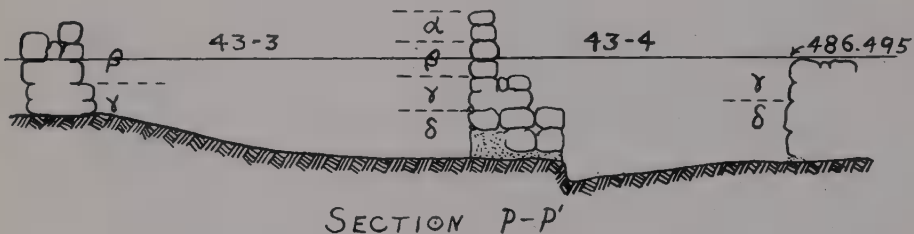
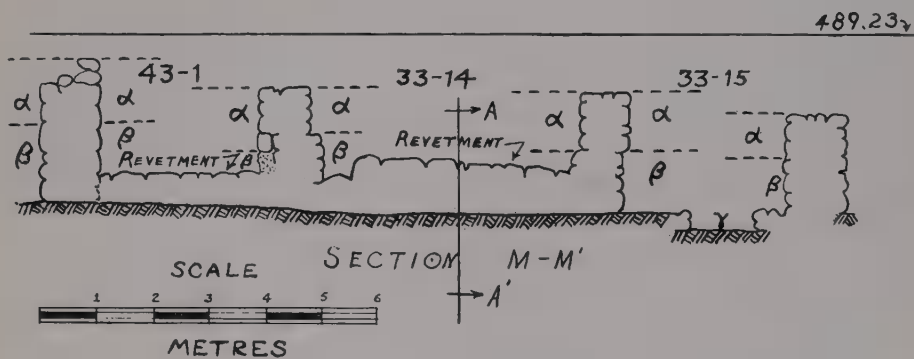
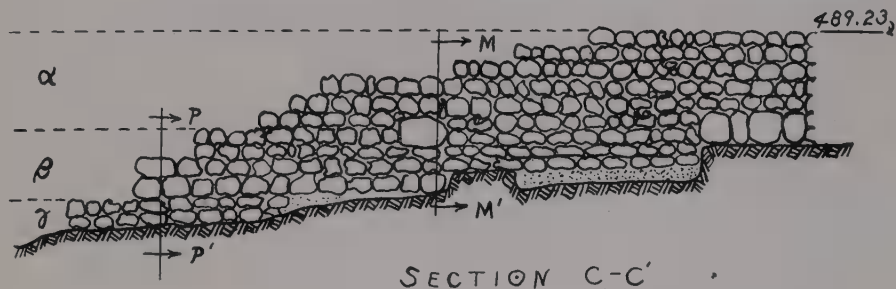
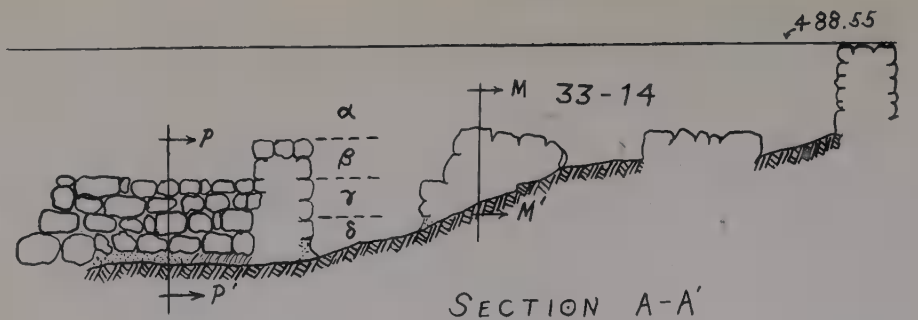
- water-channel, III, 31
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 Zeredah, III, 162
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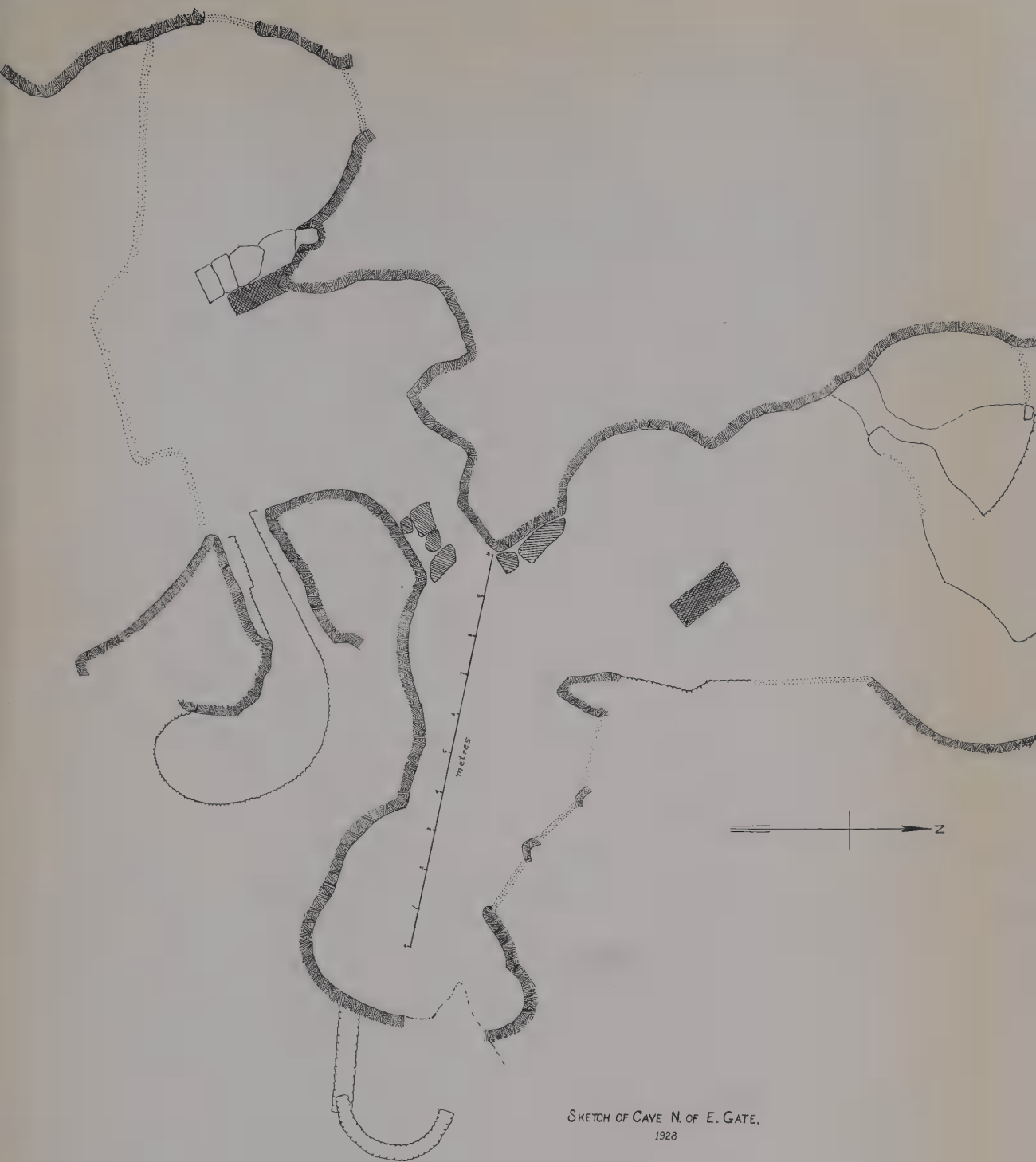
white slip ware
see white slip ware

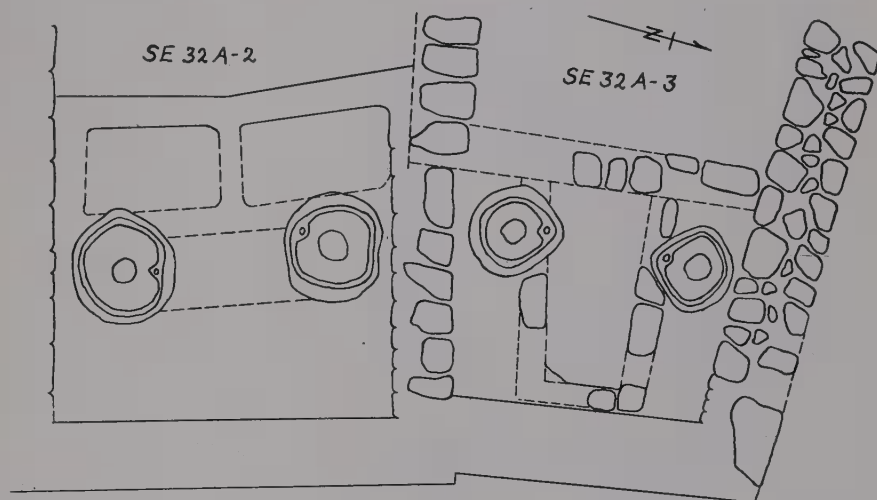
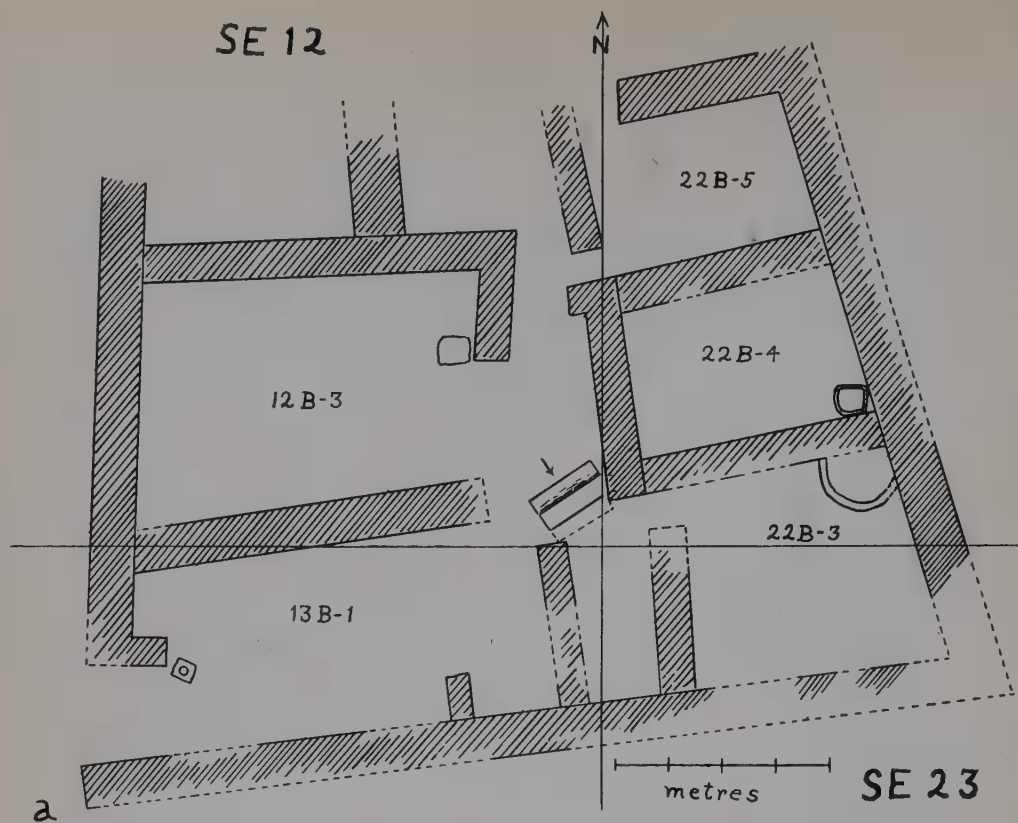
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18 Jan 1921

PLATES







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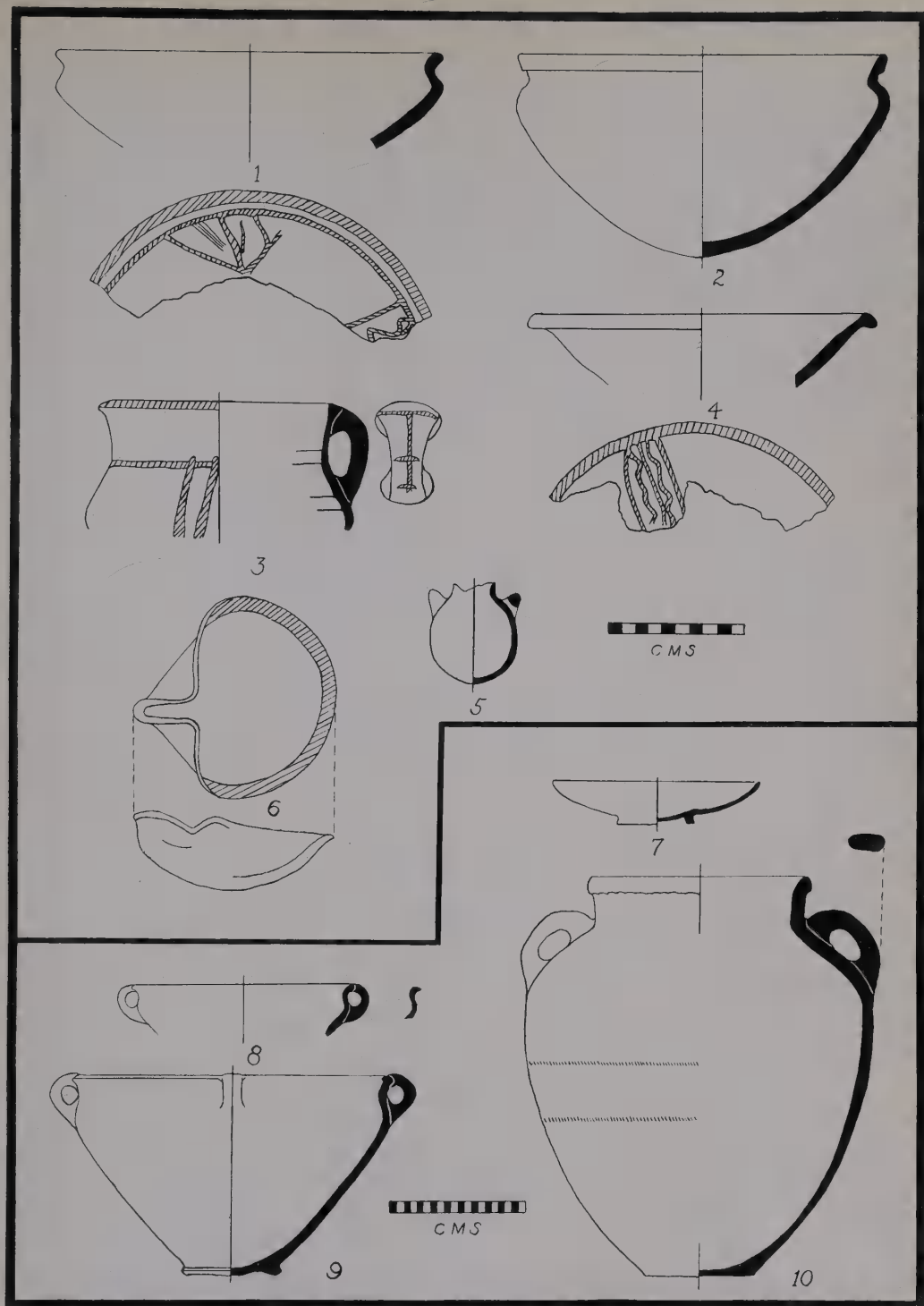


PLATE 12

Miscellaneous pottery from stratum B, 1932 campaign
(Nos. 2 and 9 belong to stratum C; No. 7 is E-D).

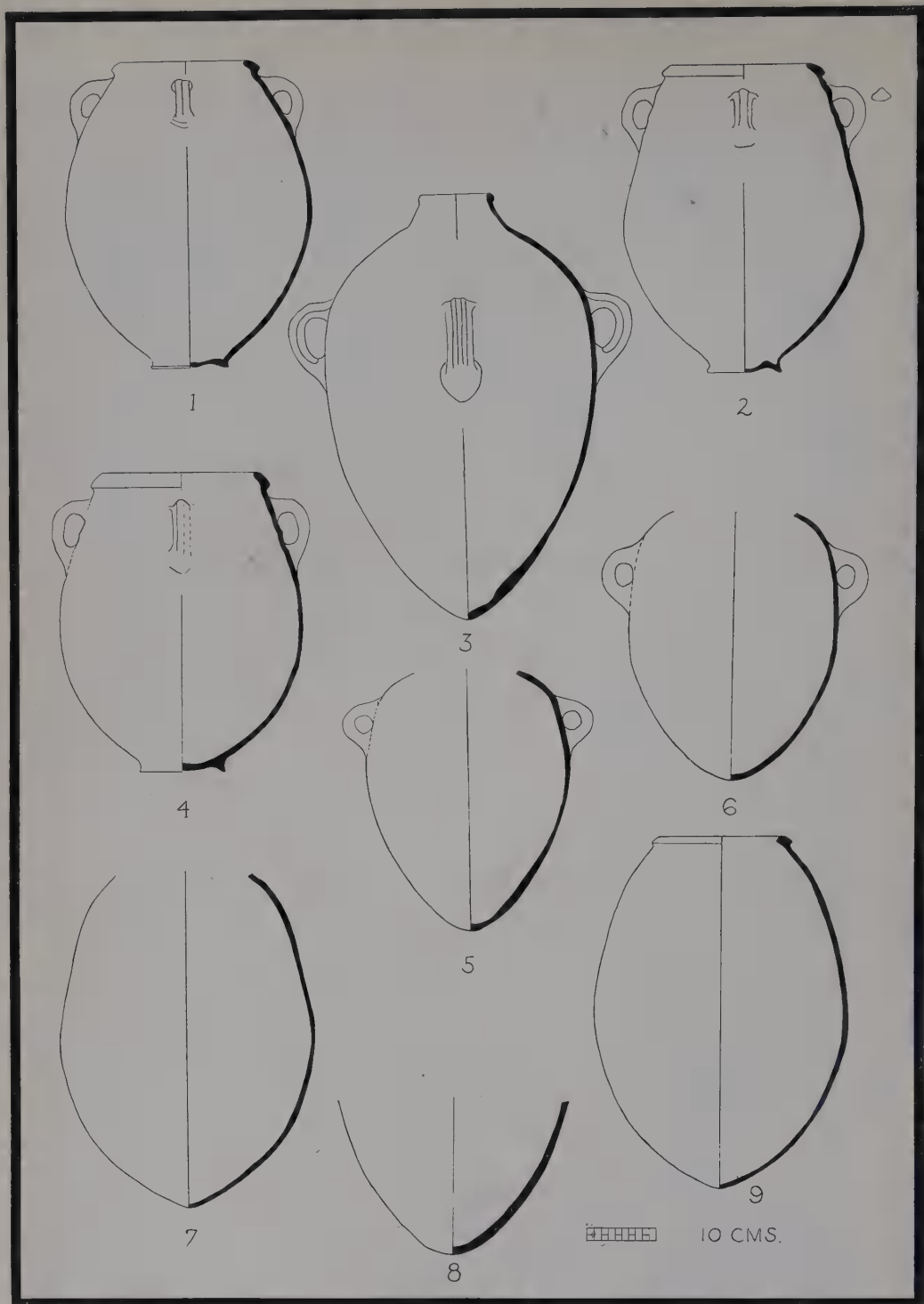


PLATE 13

Pottery from stratum A, campaign of 1932.

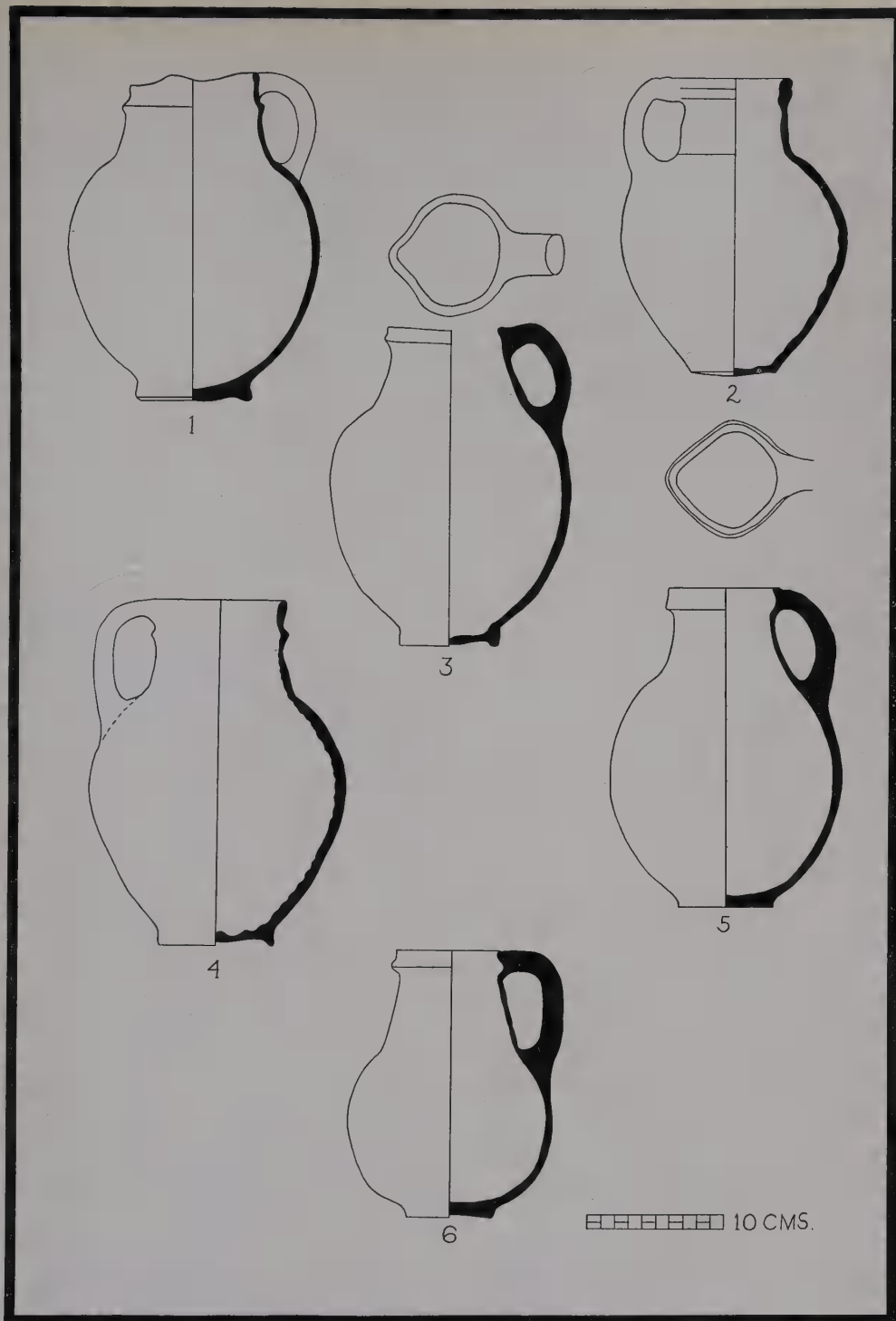


PLATE 14

Pottery from stratum A, campaign of 1932.

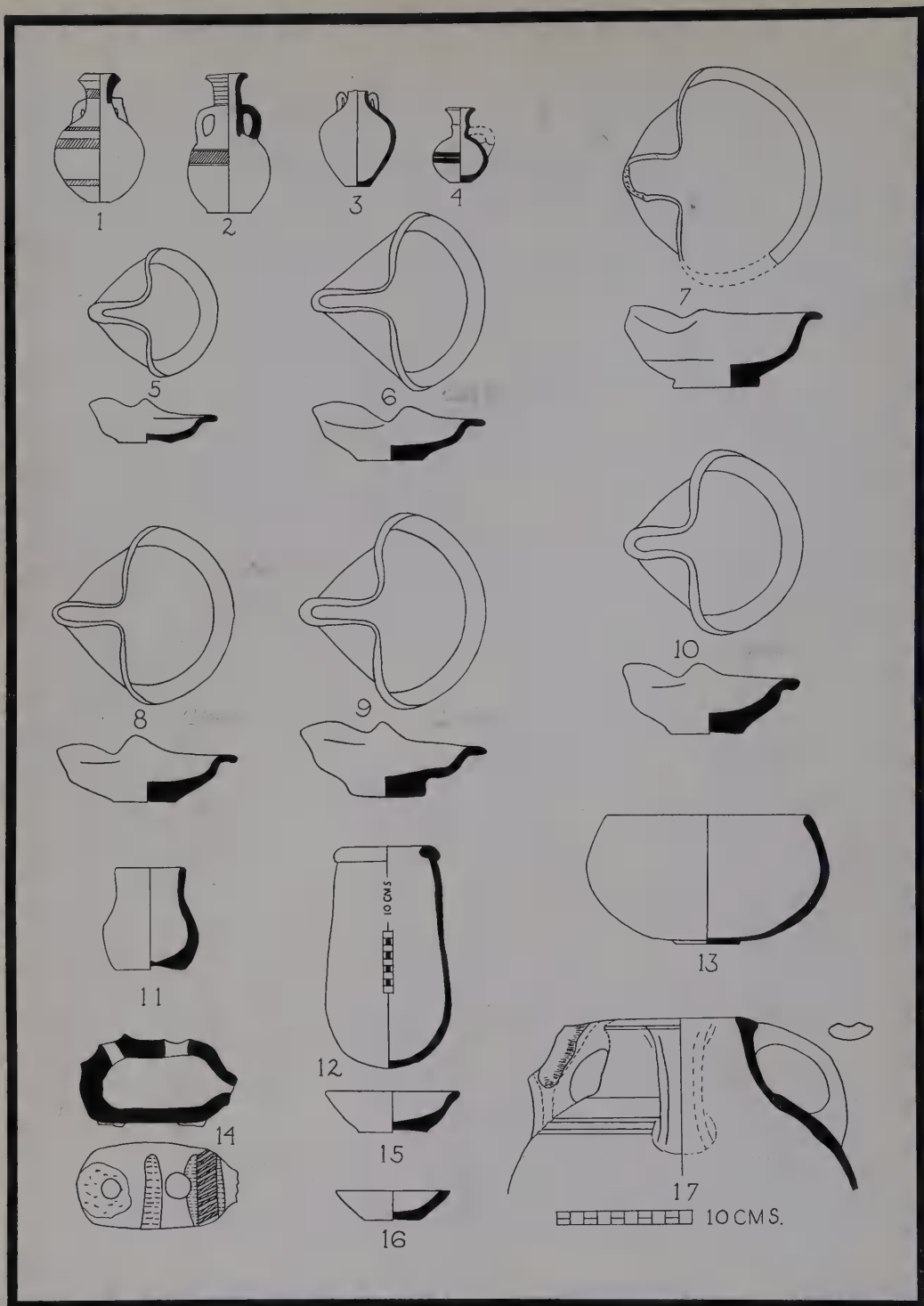


PLATE 15

Pottery from stratum A, campaign of 1932.

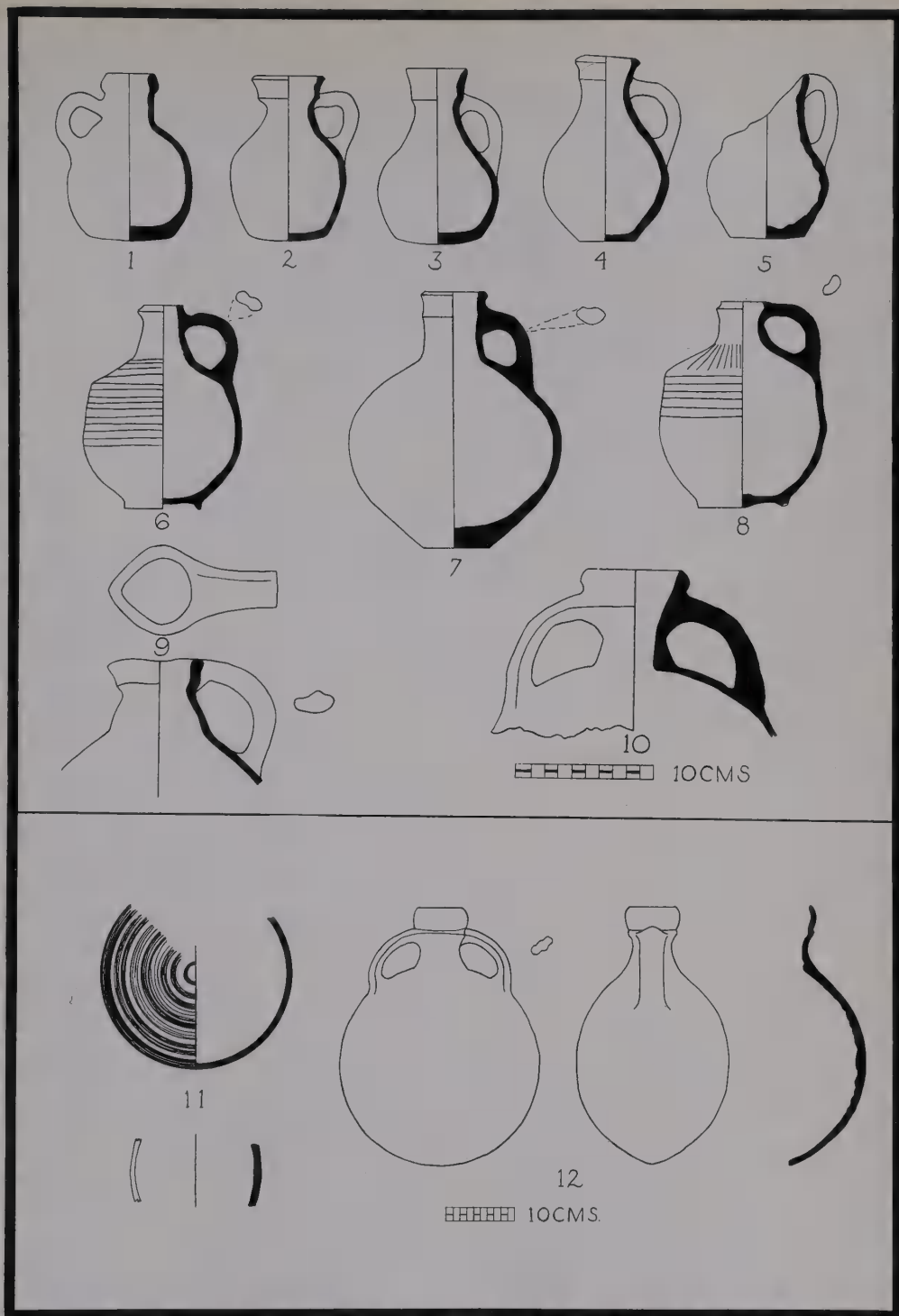


PLATE 16

Pottery from stratum A, campaign of 1932.

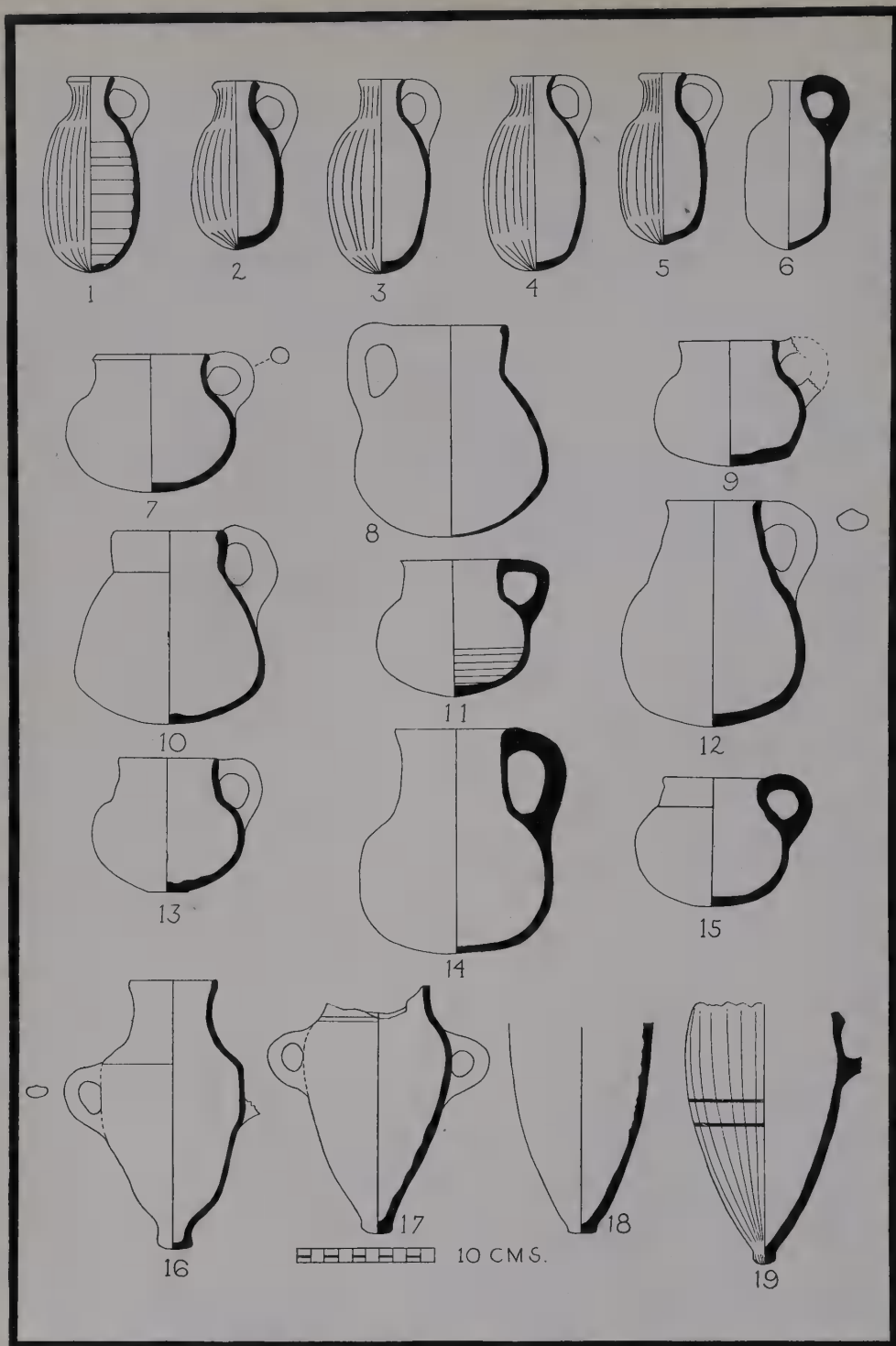


PLATE 17

Pottery from stratum A, campaign of 1932.

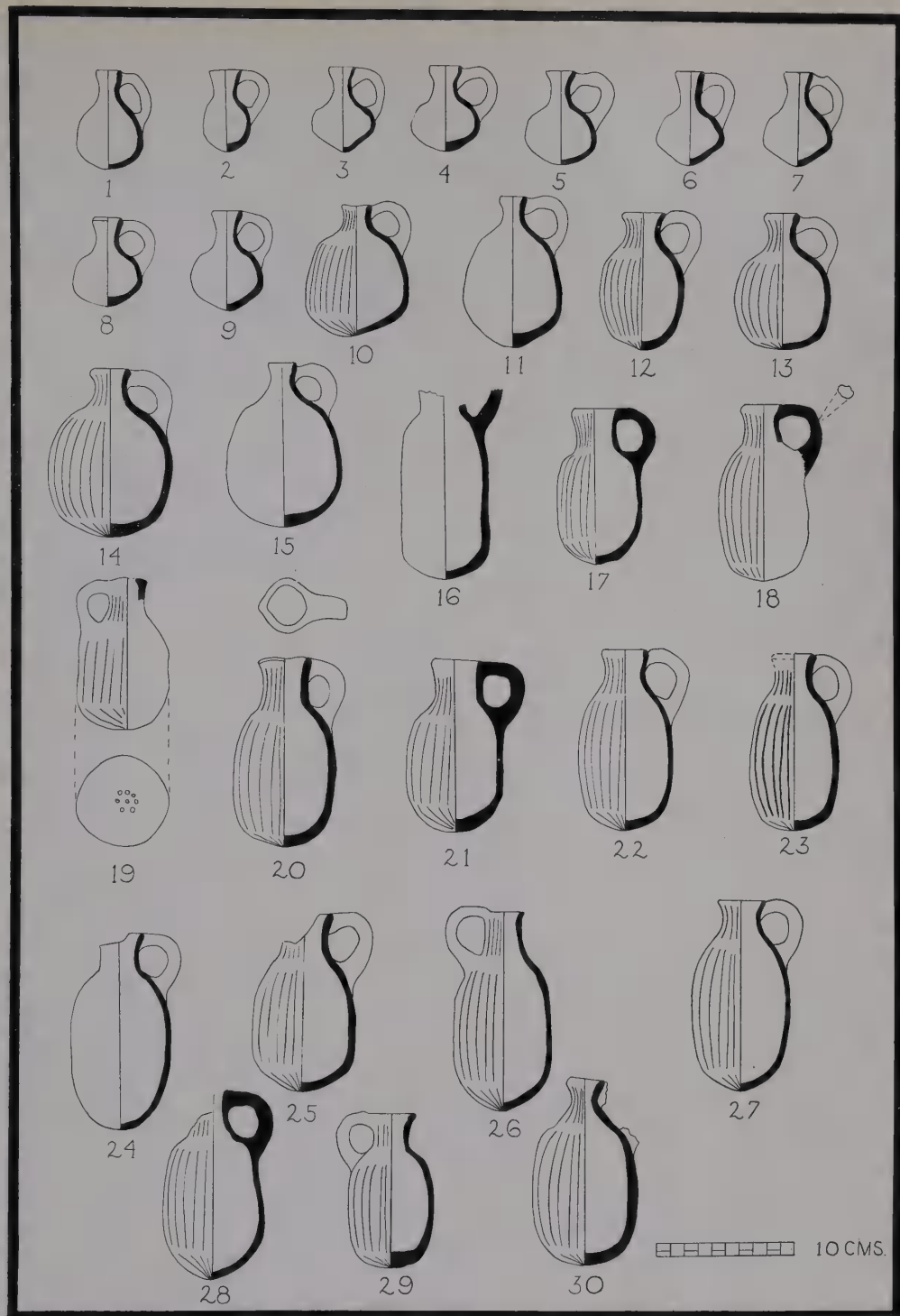


PLATE 18

Pottery from stratum A, campaign of 1932.

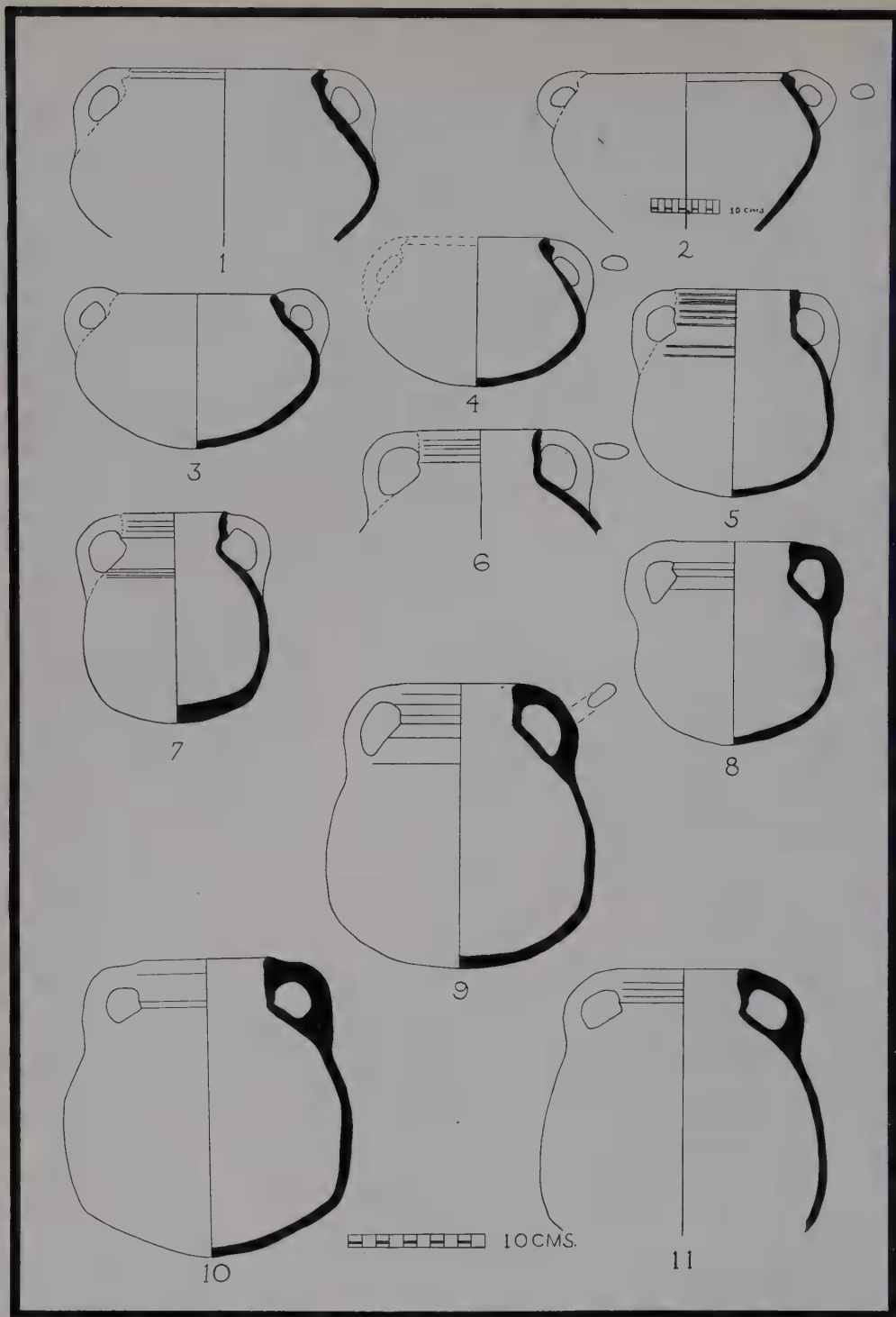


PLATE 19

Pottery from stratum A, campaign of 1932.

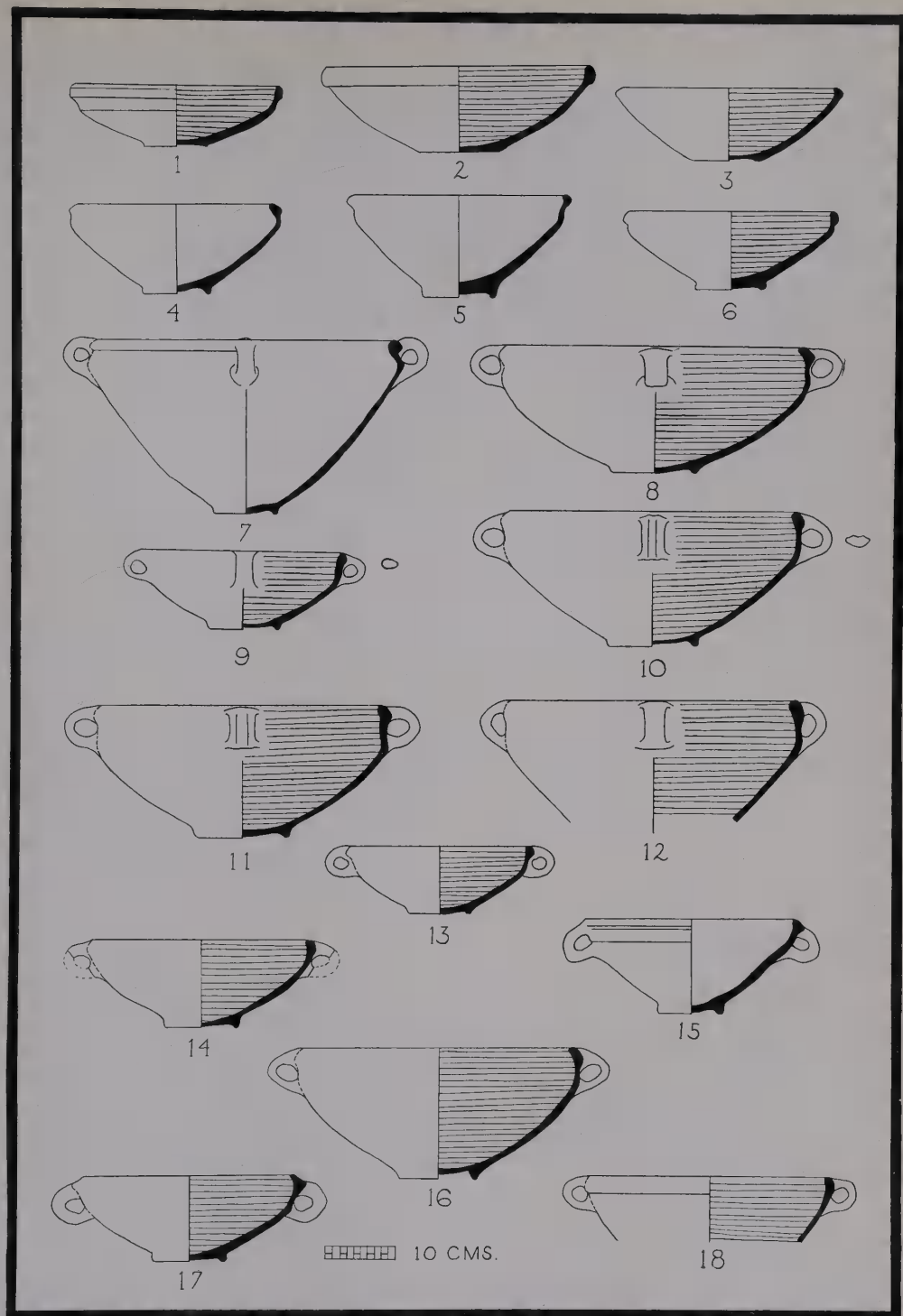


PLATE 20

Pottery from stratum A, campaign of 1932.
(No. 7 is probably from C₂.)

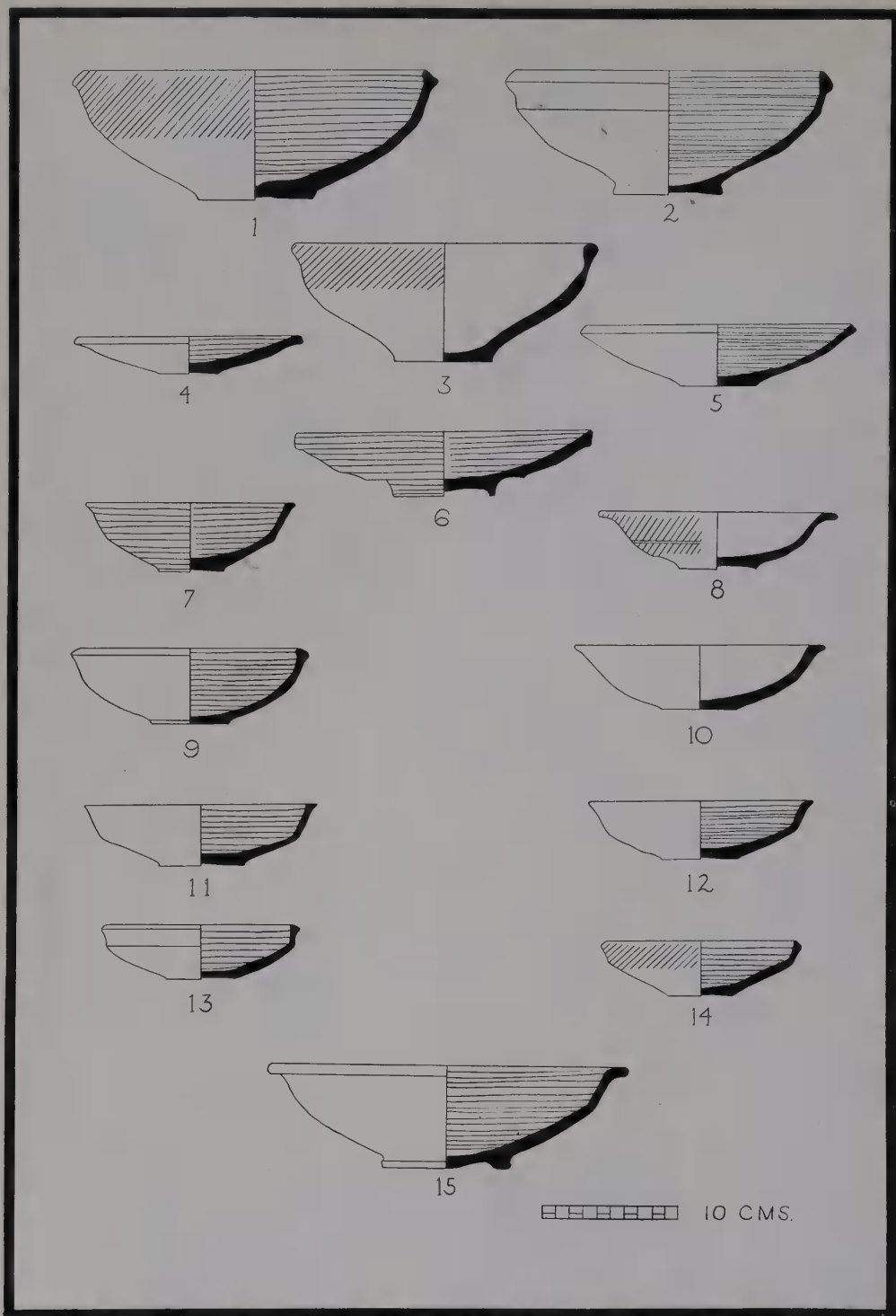
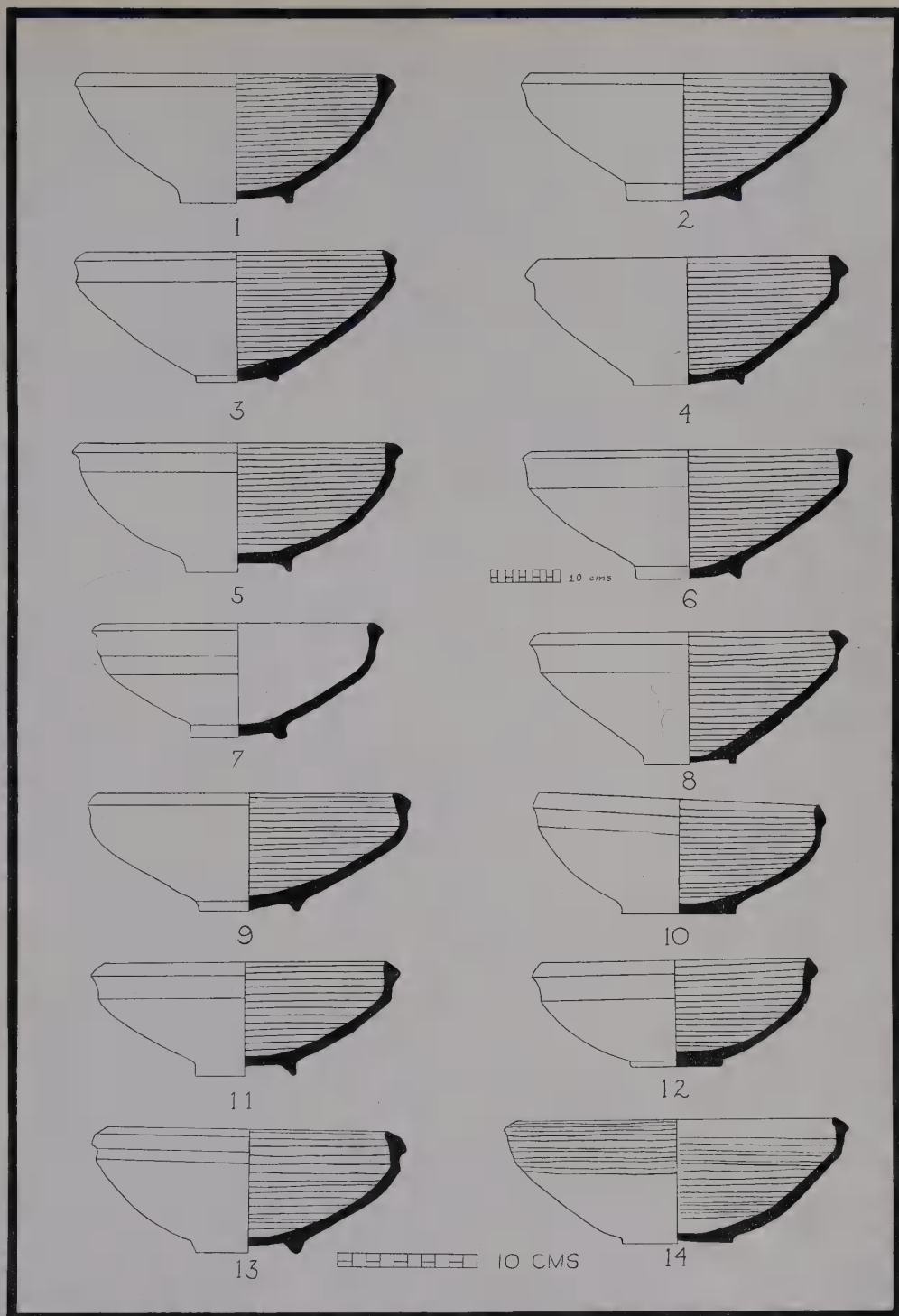


PLATE 21

Pottery from stratum A, campaign of 1932.



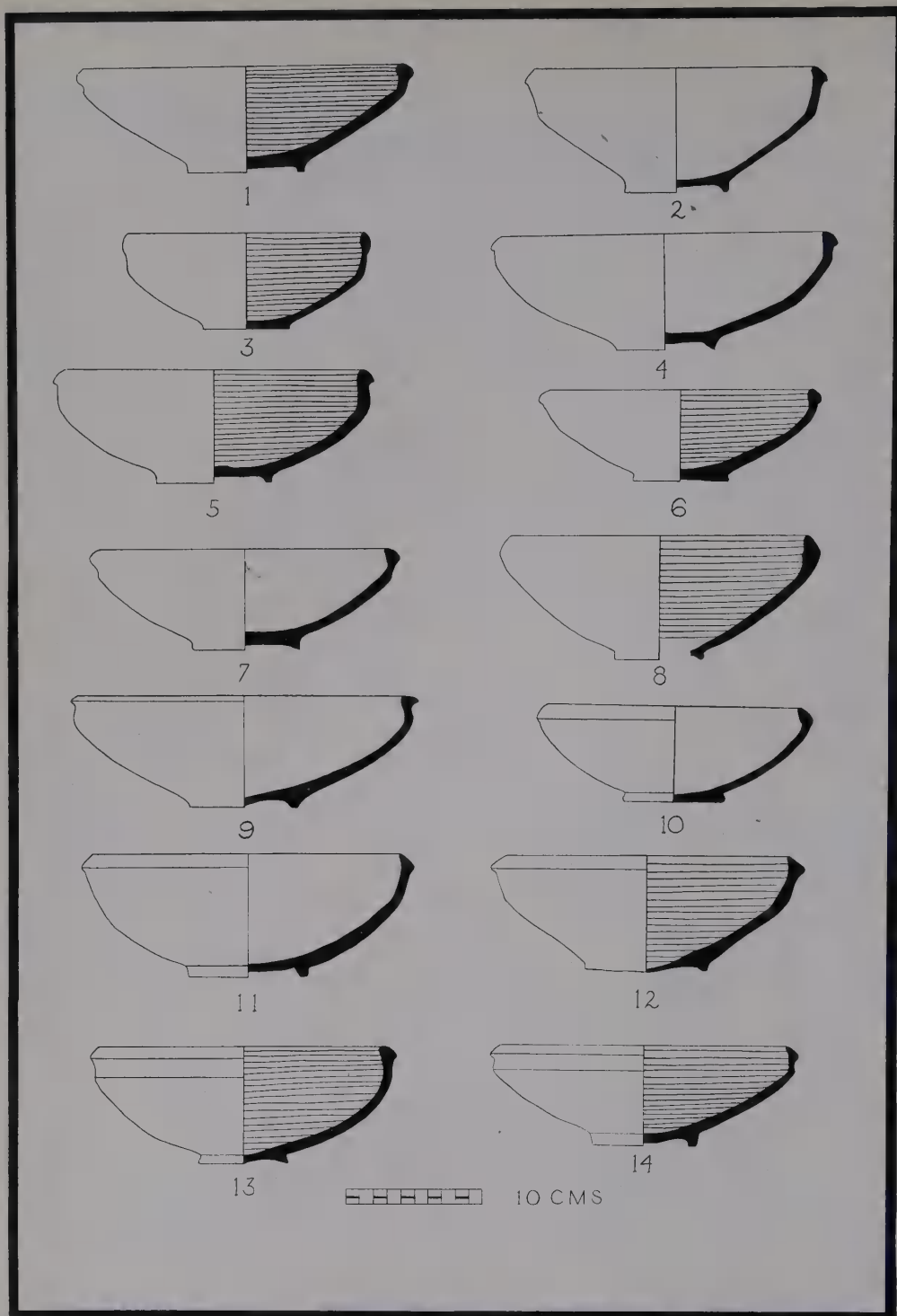
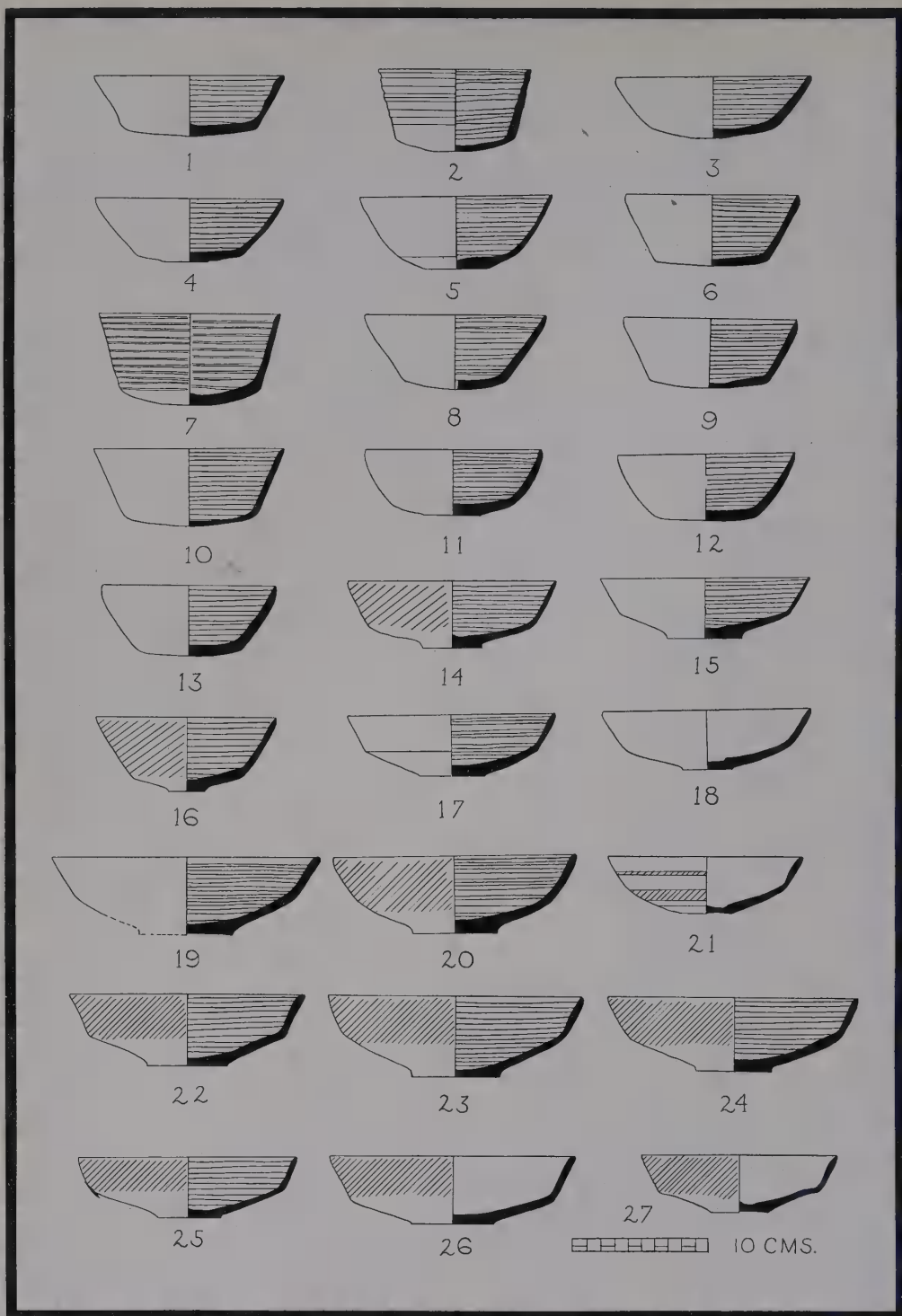
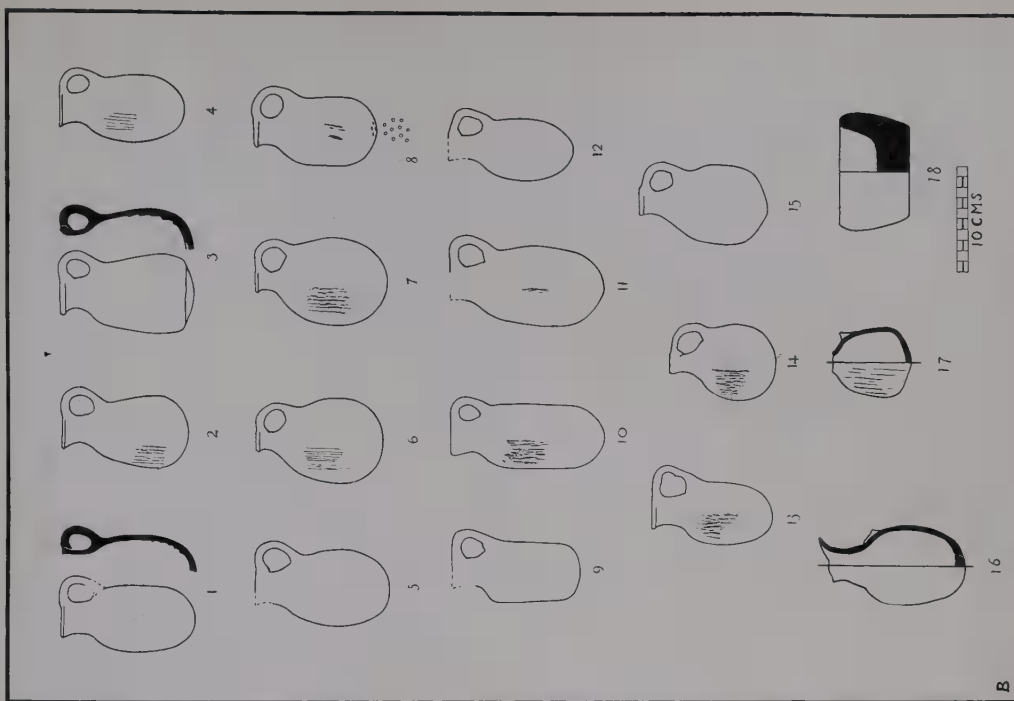
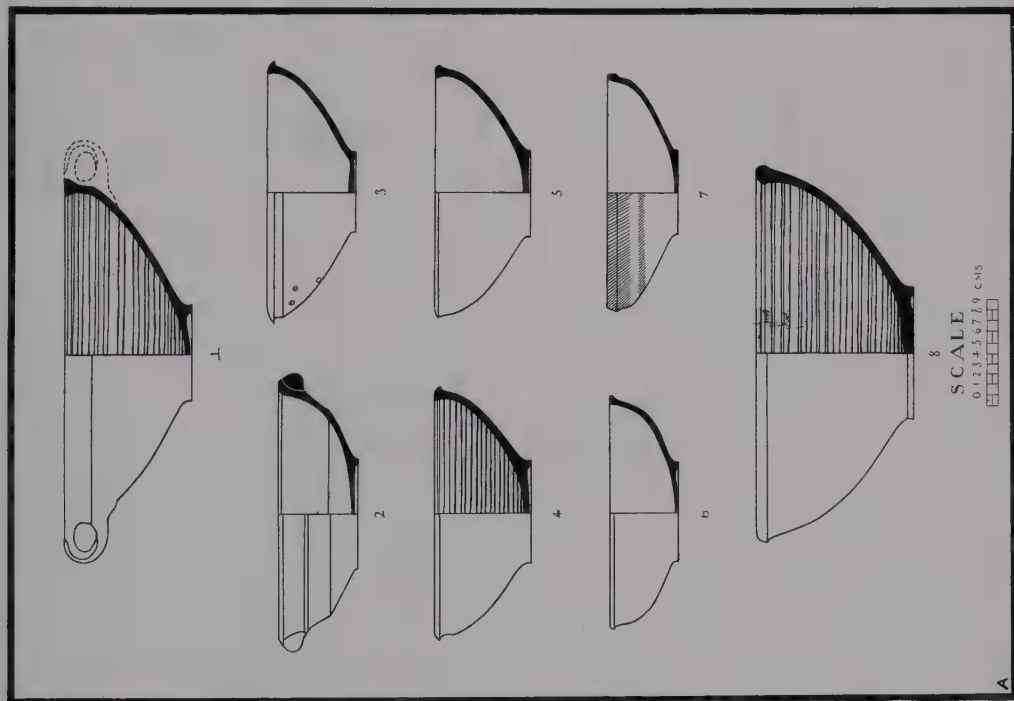


PLATE 23

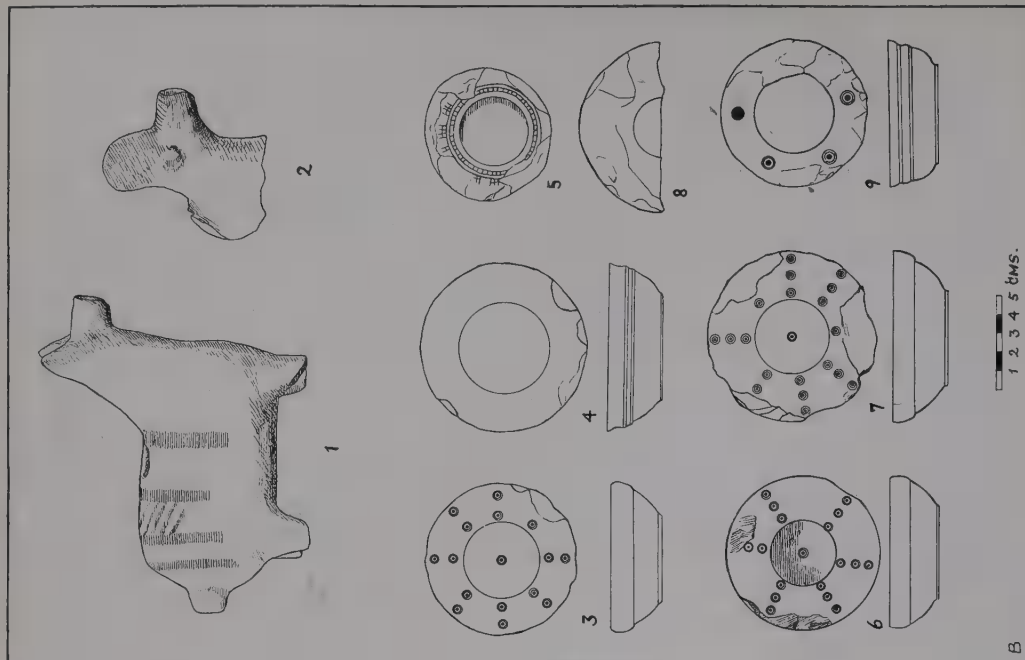
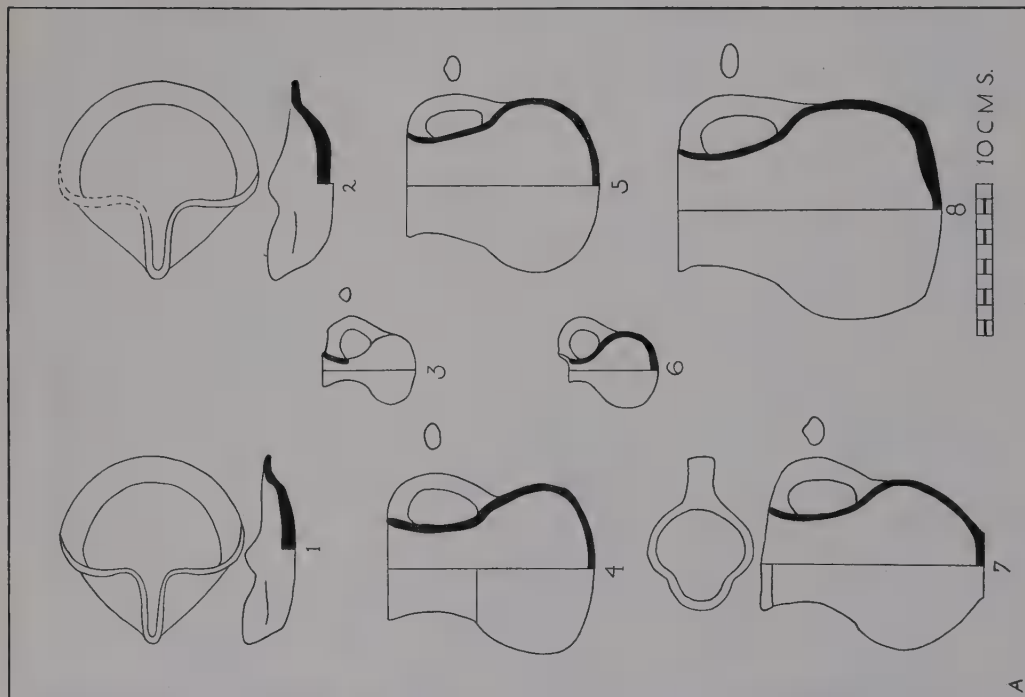
Pottery from stratum A, campaign of 1932.





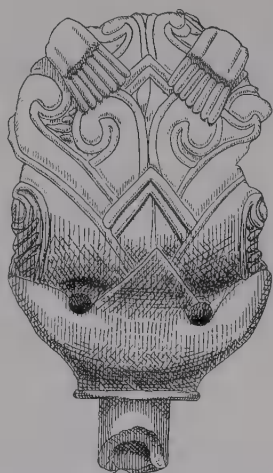


Miscellaneous pottery from stratum A, campaigns of 1920-1928.

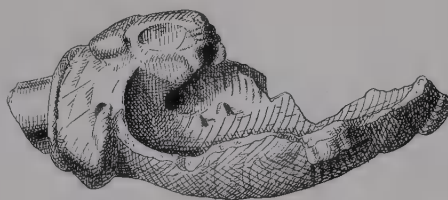


A. Iron-Age Pottery from tombs at Zāherīyeh.

B. Figurines and cosmetic palettes from stratum A (1930).



1



2



3

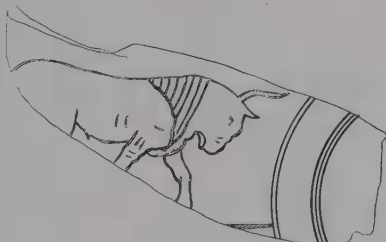


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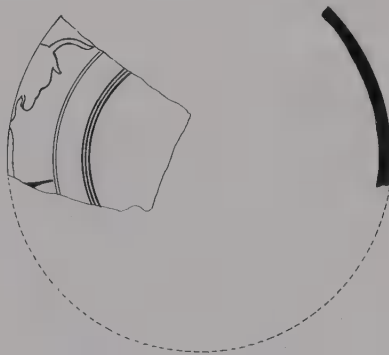
2 CMS.



5 CMS.



5



6

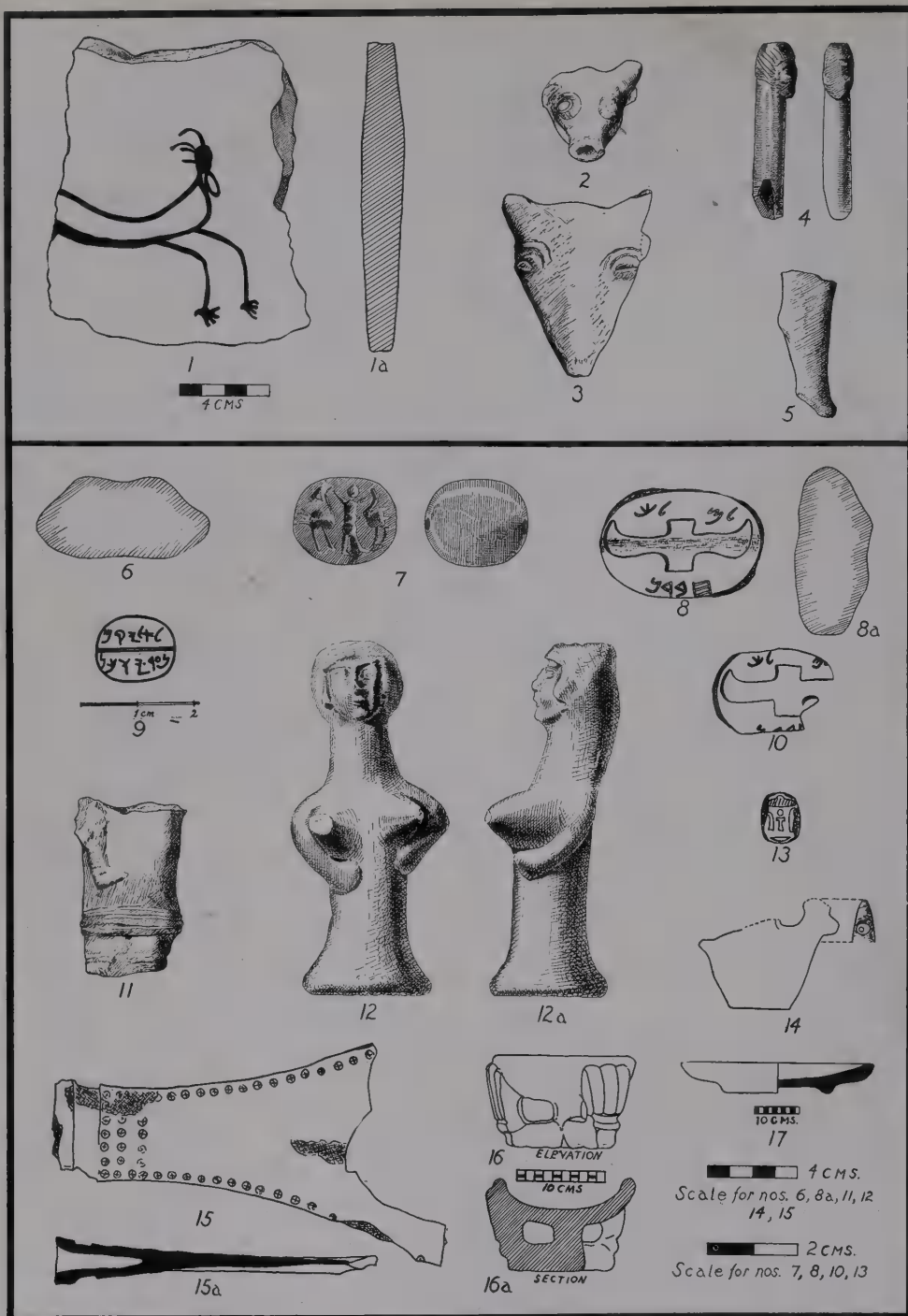


PLATE 29 Miscellaneous objects from Iron Age (Nos. 6, 8, 9 from 1928; 12, 16 from 1932; the rest from 1930).

(Nos. 1-5, 7, 13[?] are from B; 17 comes from C.)

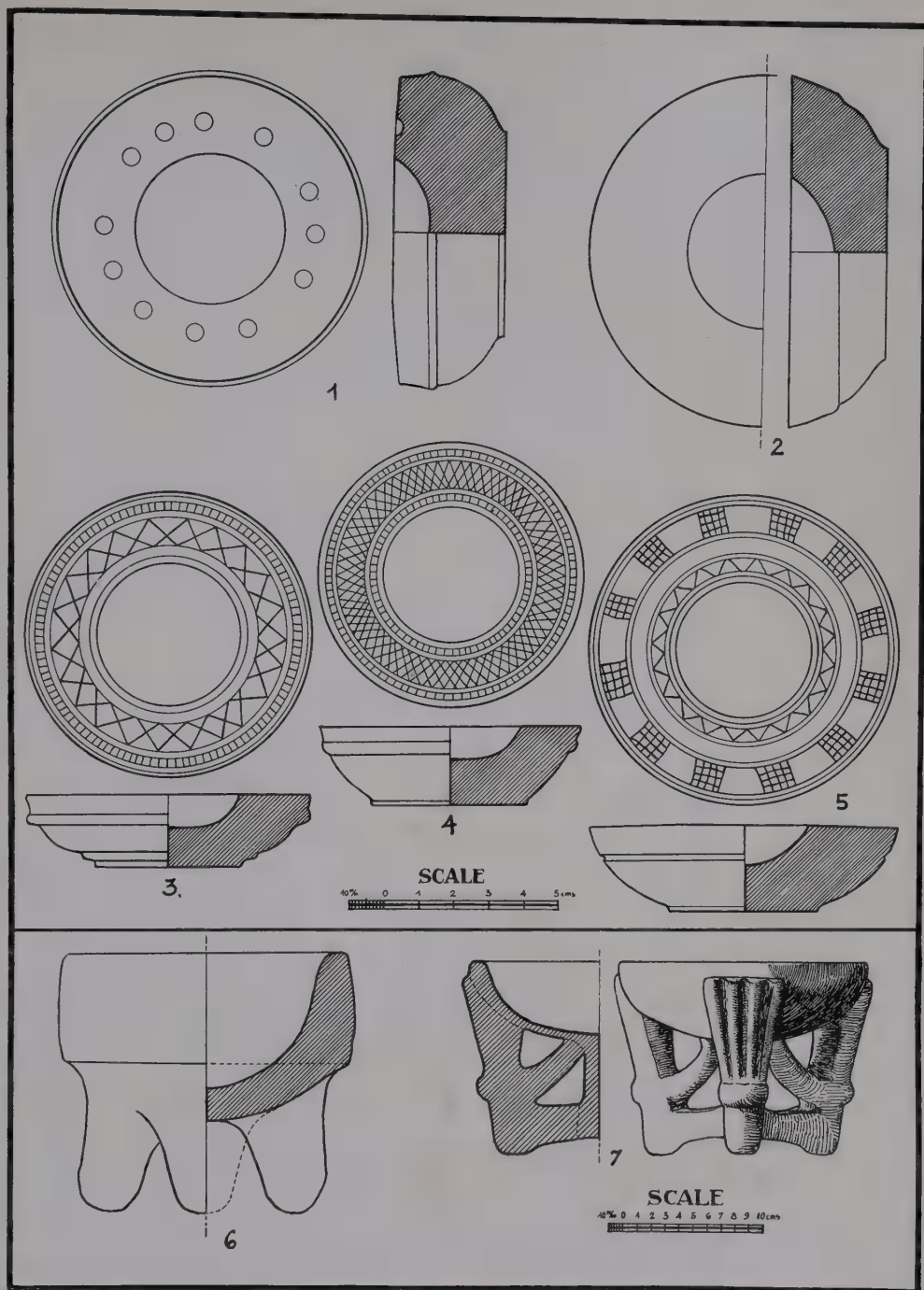




PLATE 31

Fertility figurines from A (campaign of 1930).

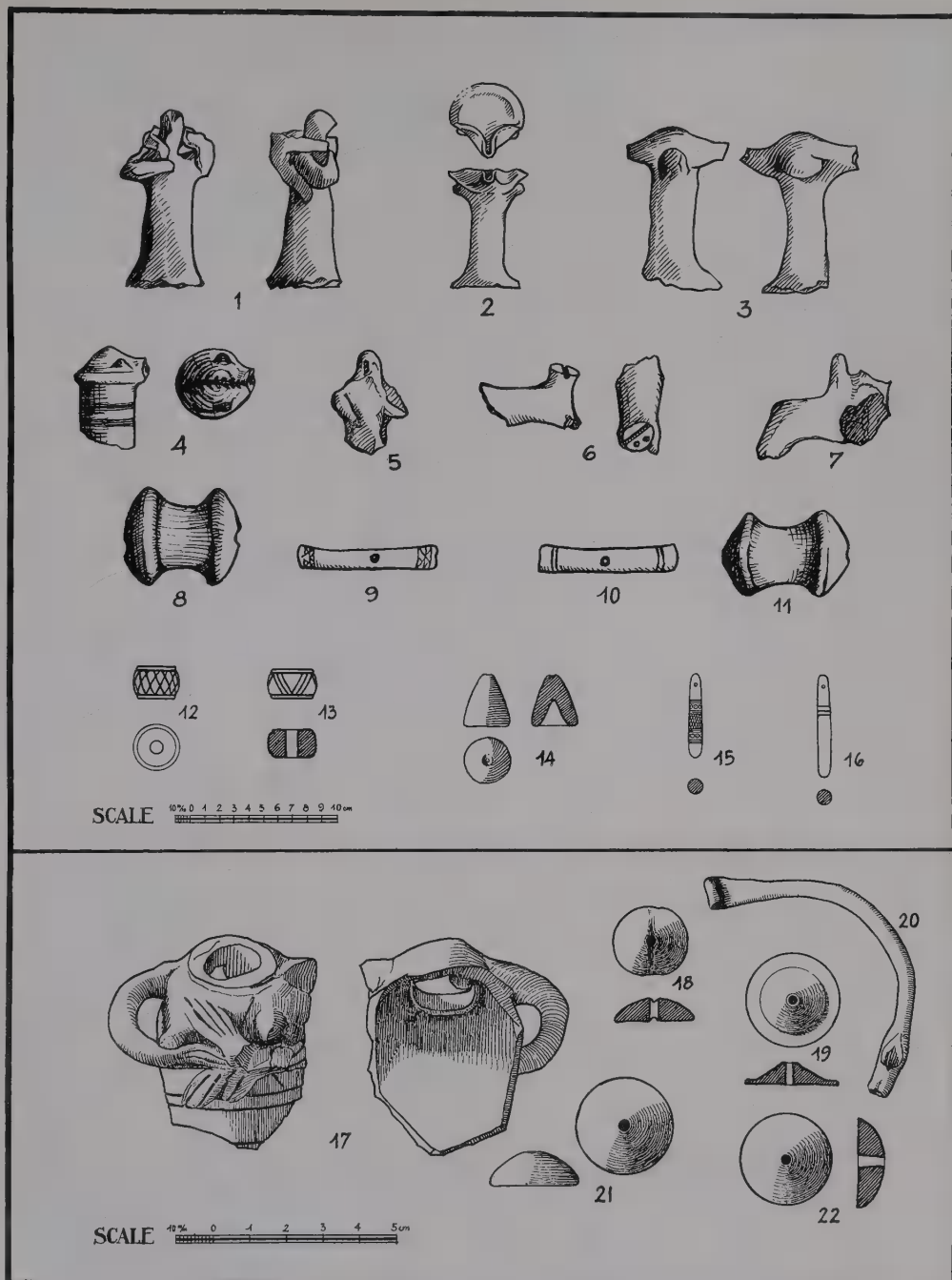


PLATE 32 Miscellaneous objects from the Iron Age (campaigns of 1926 and 1928).
(Nos. 17-22 come from B deposits.)

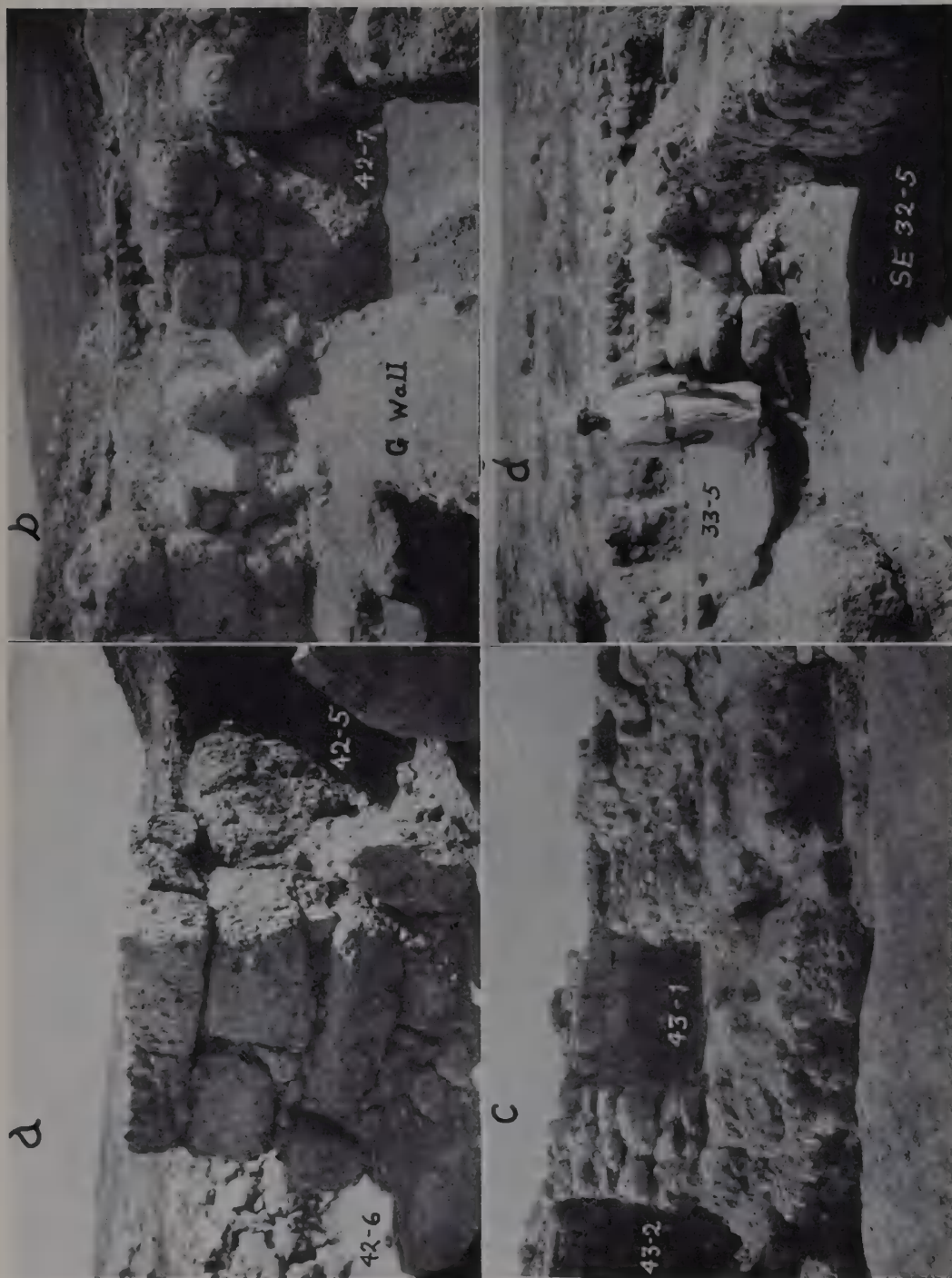


PLATE 33

- a. Looking across SE 23 A toward the excavation camp in the southwest (1930).
- b. The excavation camp in 1930.

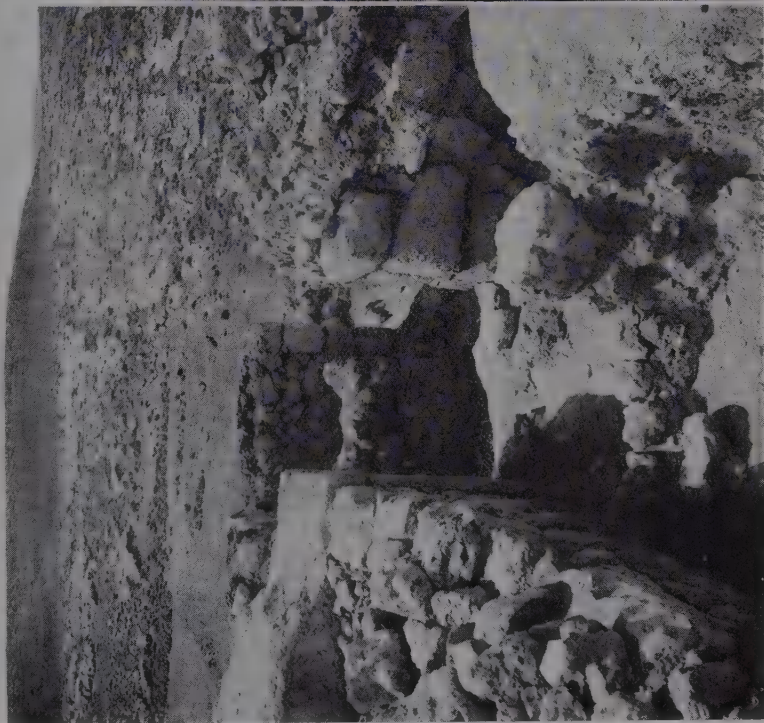


a. The East Gate from outside, looking northwest (1926).
 PLATE 34 b. Looking toward the East Gate from the east. In the foreground is the
 plaster floor of a water basin of stratum A (1926).



a. Iron Age pier of East Gate, looking south (1926).
 b. North side of East Gate, looking northeast at the transverse water channels (1926).
 c. The East Gate from outside looking northwest (1926).
 d. Staircase in stratum A, looking southeast (1926).

d



b



a. The West Gate from the inside of the town, looking west (1926).
 b. Looking north across the outer end of the West Gateway toward the West Tower (1926).

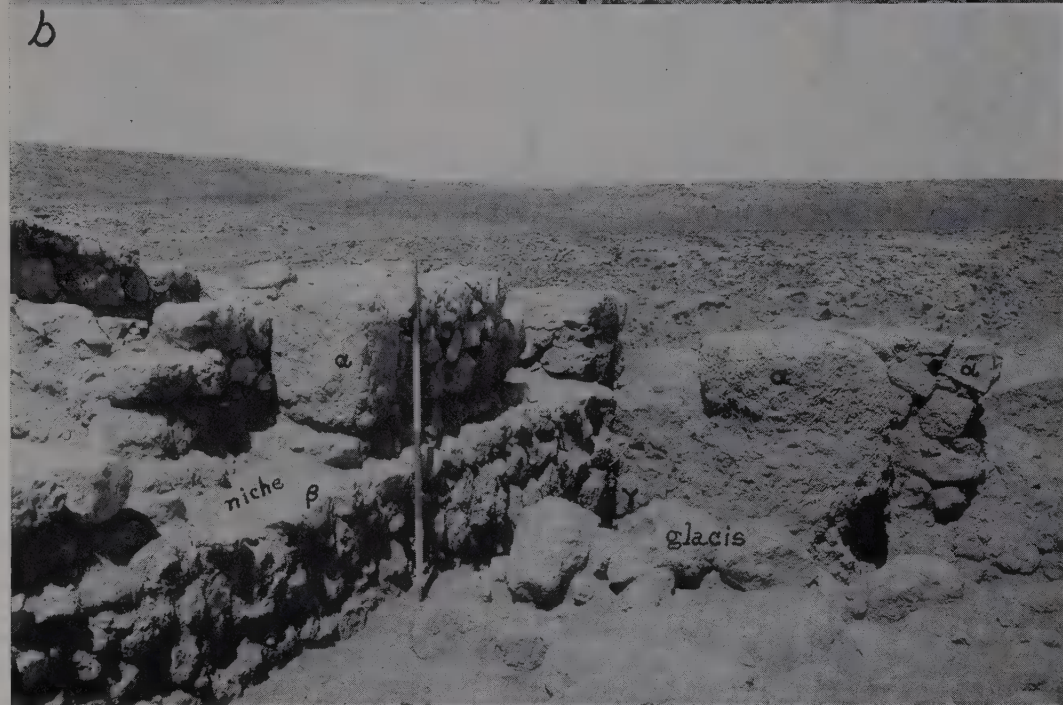


PLATE 37

- a. The West Tower, partly cleared away, looking northwest (1932).
 b. The interior of the West Tower, looking southwest at the stratification (1932).



PLATE 38

- a. North side of the court of the West Tower after excavation, looking northwest (1932).
- b. West side of the West Gate, looking southeast after excavation (1932).



PLATE 39

a. North room of the West Tower after excavation (1932).

b. North wall of West Tower, with glacis of city-wall before it (cf. Plate 40, b, 1932).



PLATE 40

- a. Older constructions under court of West Tower, looking southeast (1932).
 b. North wall of West Tower, with glacis of city-wall (cf. Plate 39, b, 1932).

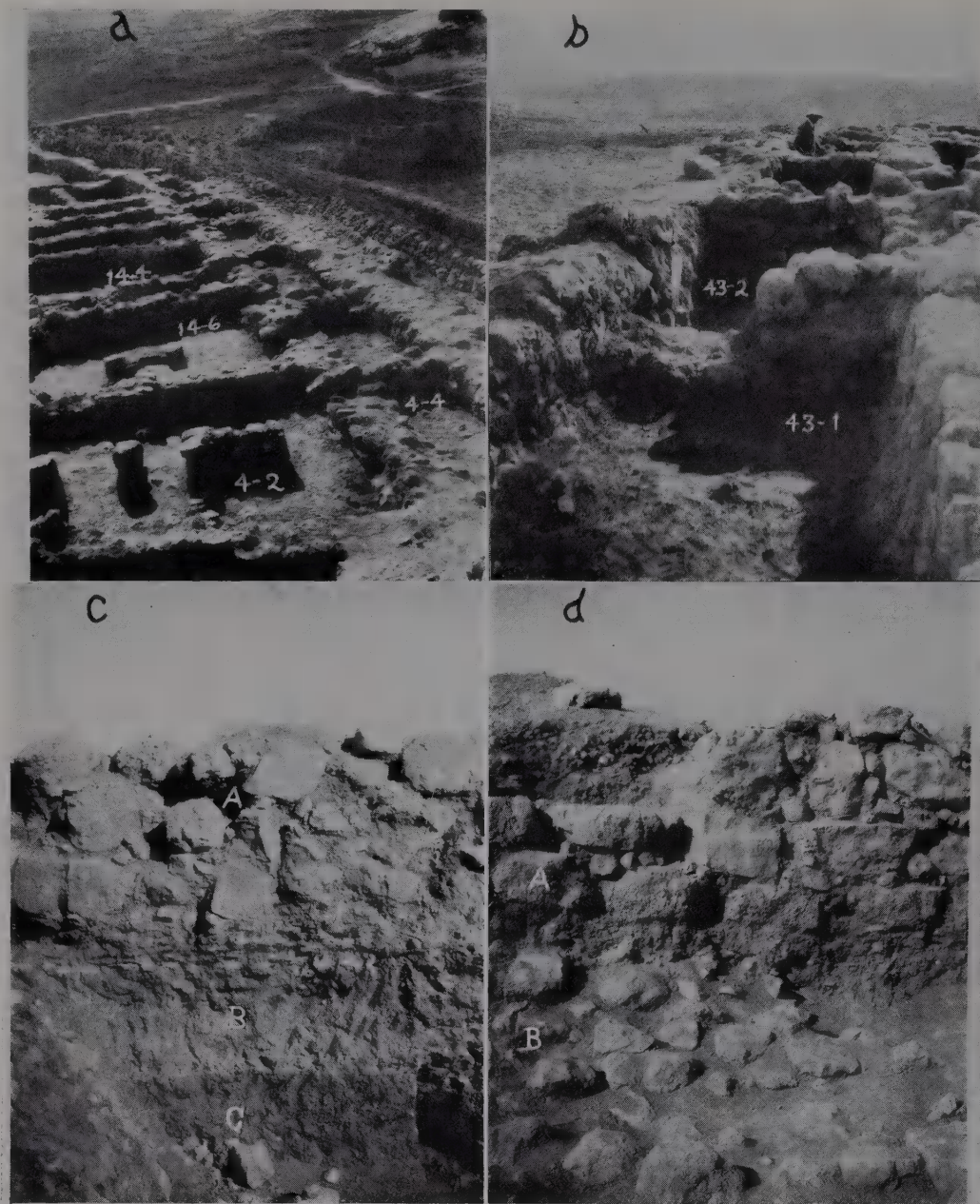


PLATE 41

- a. City-wall with casemates (stratum A) in southeast quadrant, looking southeast (1930).
- b. Casemates of city-wall (stratum A), looking southwest (1928).
- c. Inside face of Iron-Age city-wall in SE 33 (1928).
- d. Inside face of city-wall in SE 33, showing stratification (1928).

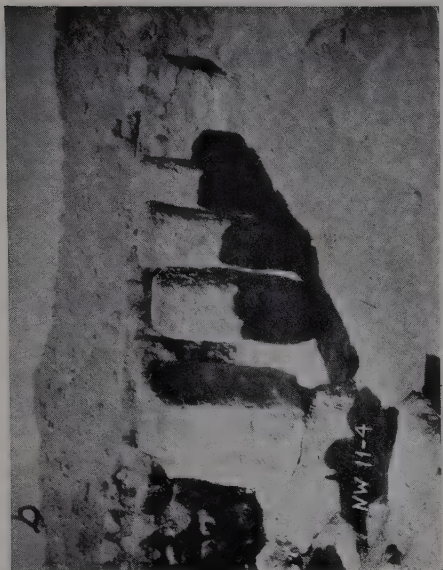


a. Southeast quadrant after part of stratum A had been cleared away, looking southeast (1930).
 b. Casemates of city-wall (stratum A), looking north toward West Gate (1932).



PLATE 43

- a. Stratum A, looking northwest toward West Tower (1932).
 b. Pillars of house in NW 32 (stratum A), looking north (1932).

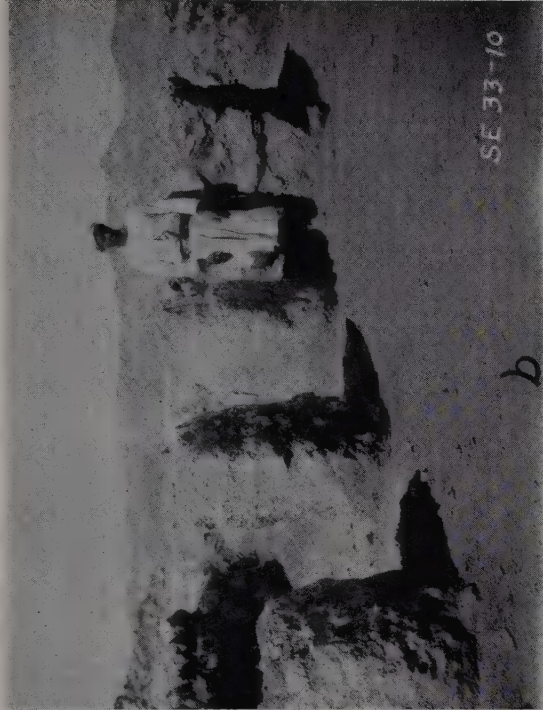


- a. Pillars of house in NW 11 (stratum A), looking south (1928).
- b. Pillars of house in NW 11 (stratum A), looking northeast (1928).
- c. Room in SE 50 (stratum A), looking south (1926).
- d. Main entrance of West Gate, looking southeast into the town from the gateway (1926).

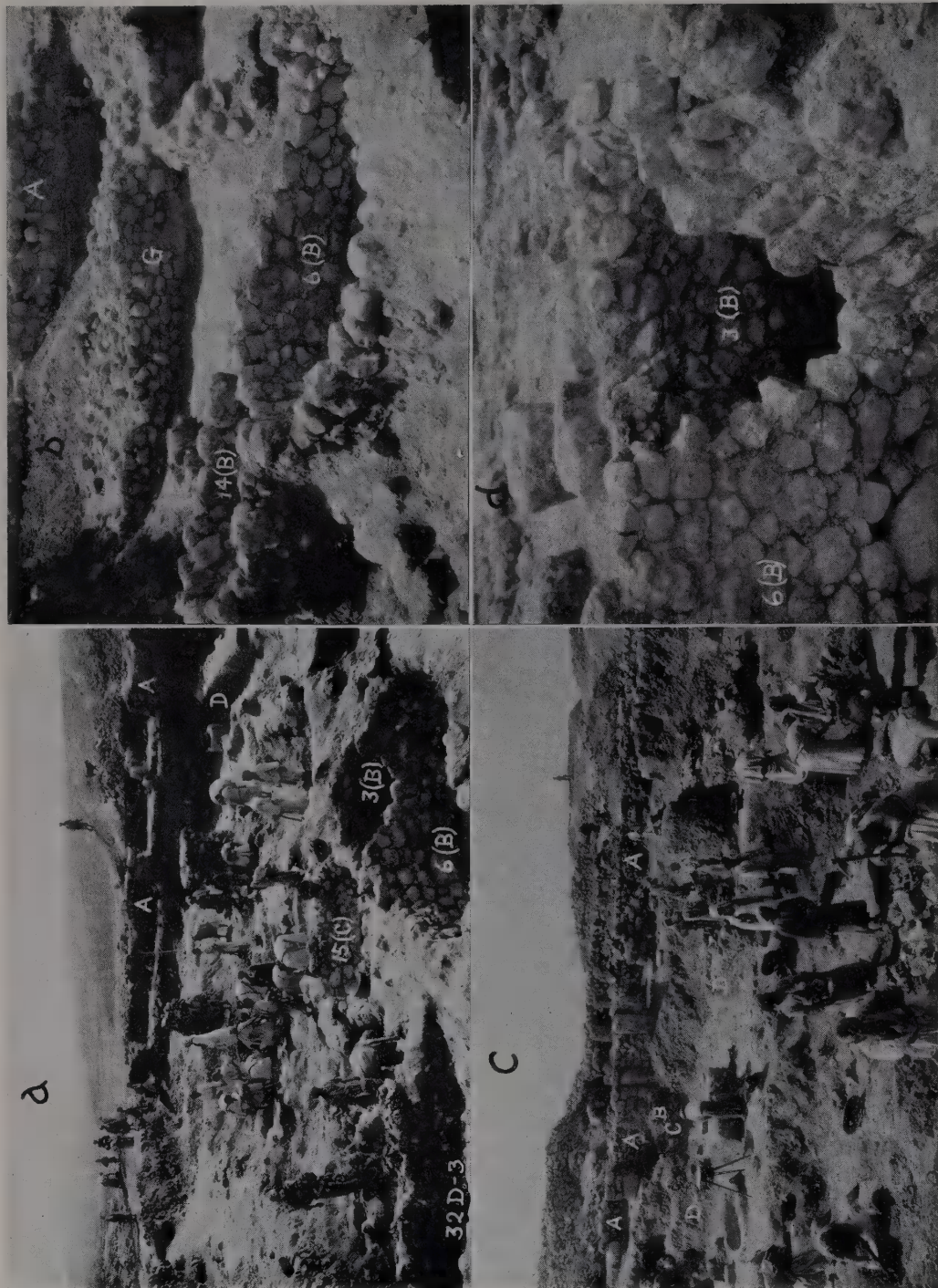


PLATE 45

- a. House in NW 31 (stratum A), looking southwest (1932).
 b. Another view of same house, looking north (1932).



- a. Pillars of house in SE 22 (stratum A), looking south (1928).
- b. Pillars of house in SE 33 (stratum A), looking south (1928).
- c. Staircase leading from one street-level in SE 32 (stratum A) to a higher one (1928).
- d. Court of West Tower, looking south (1926).



a. Silos 3 and 6 (stratum B), with walls lowered during excavation of stratum D in southeast quadrant (1928).
 b. Silos 6 and 14 (B), with G and A city-walls in background, looking south (1928).
 c. Looking northward across excavation of stratum D in southeast toward pillars of stratum A in SE 22-32 (1928).
 d. Silos 3 and 6 (B) as first cleared (1928).



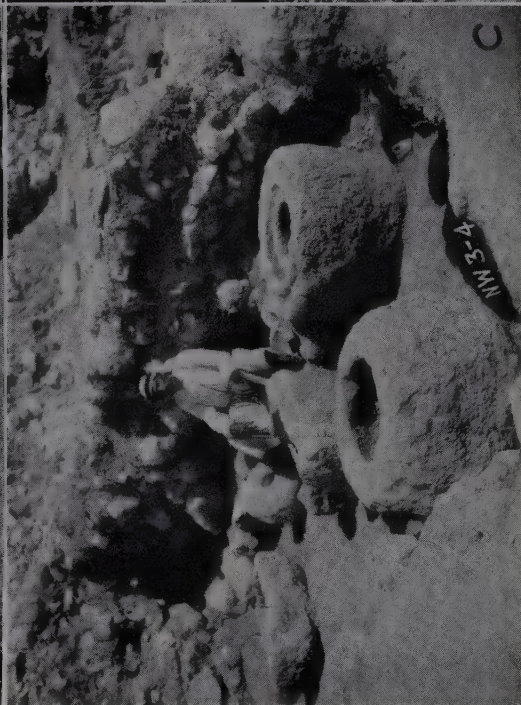
PLATE 48

- a. Small olive-press of stratum C in SE 12 (1932).
- b. Small underground bin or grain-pit from early in stratum A (1930).



PLATE 49 a. Large olive-pressing establishment in NW 32 (stratum A), looking north (1932).
 b. The same, looking southwest (1932)





- a. Pillars in NW 13-9 (stratum A), looking southeast (1926).
- b. Staircase in SE 50 (stratum A), looking south (1926).
- c. Dye-plant in NW 3 (stratum A), looking southeast (1926), also in Plate 52, b.
- d. Small dye-plant in SE 42 (stratum A), looking southwest (1926).



a. Stone dye-vat being measured.

b. Dye-plant in NW 3, looking east (cf. Plate 51, c).



PLATE 53

- a. Dye-plant SE 32 A — 2, looking east (1928).
 b. Ditto, looking southwest.

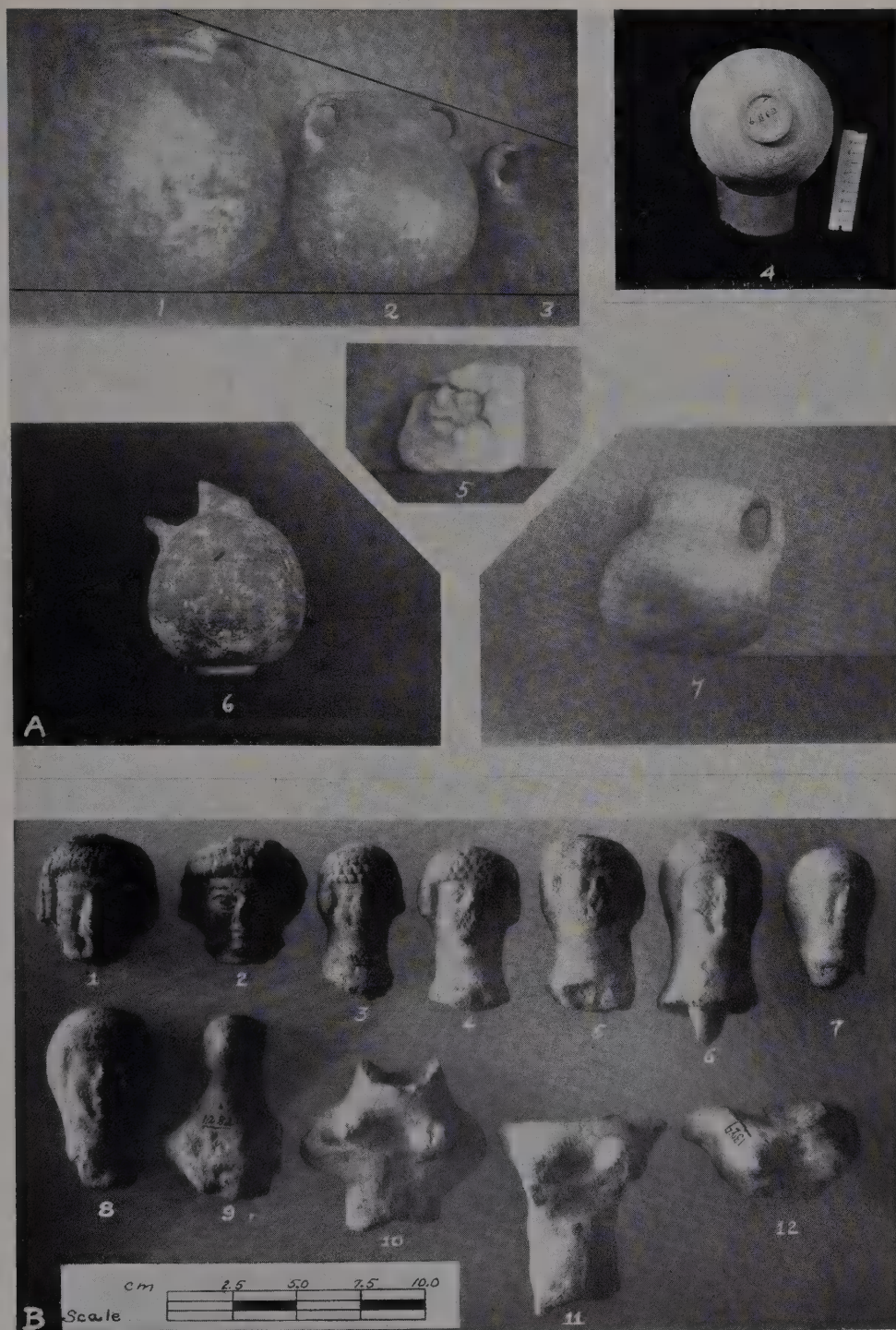
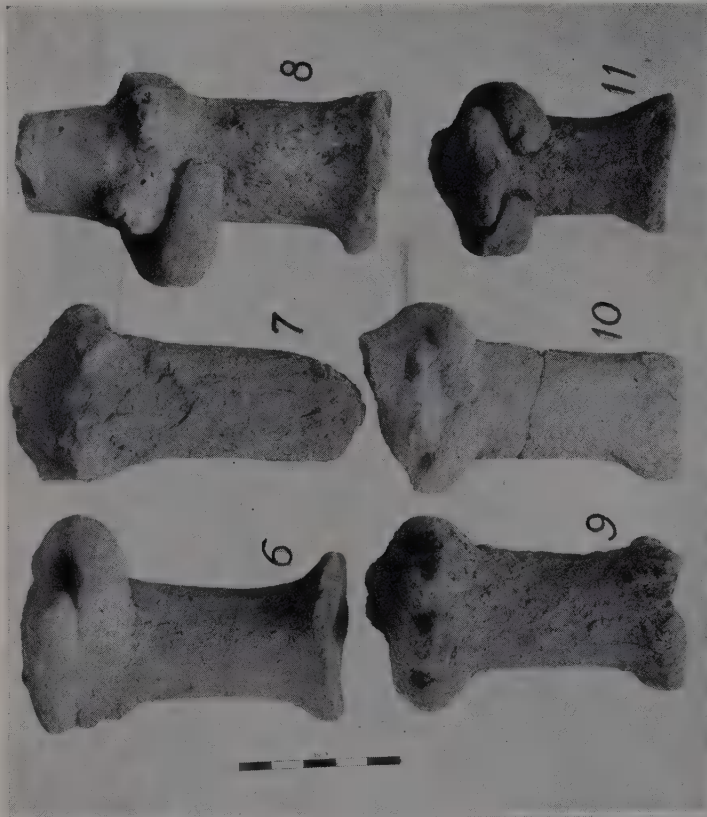
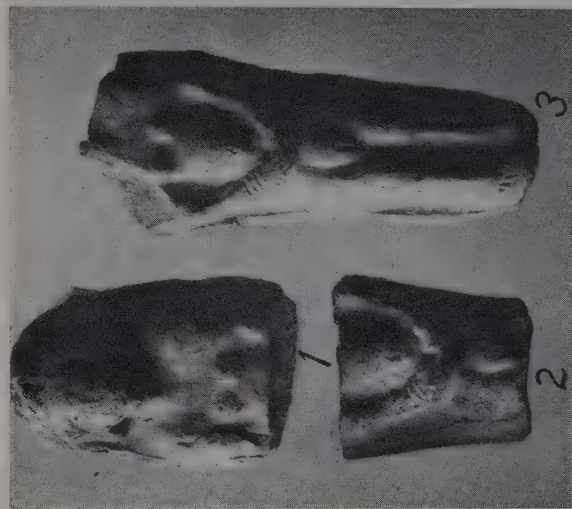
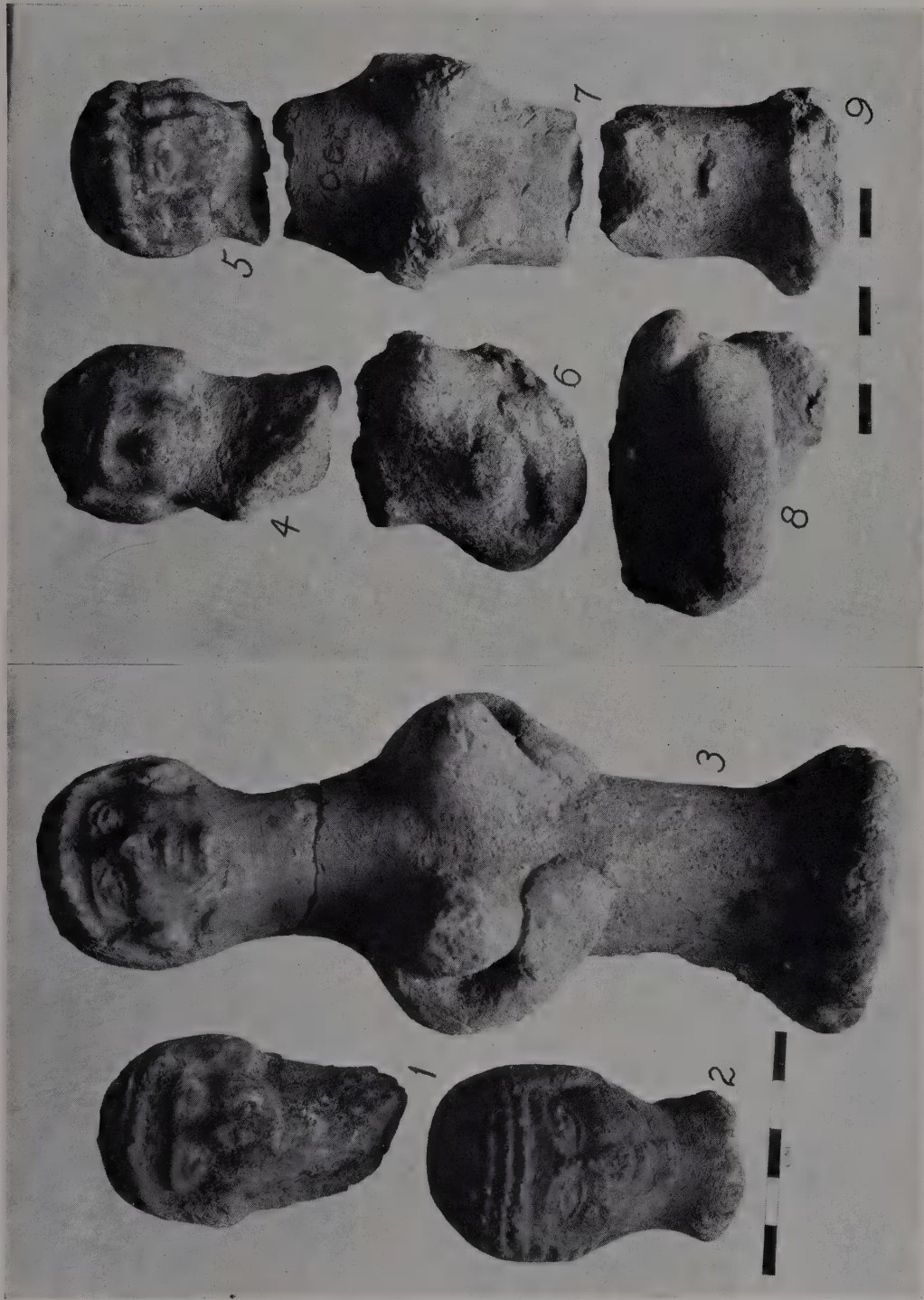


PLATE 54

a. Vases and sherds of A to illustrate technical details of manufacture.
 b. Fertility figurines from stratum A (1930).





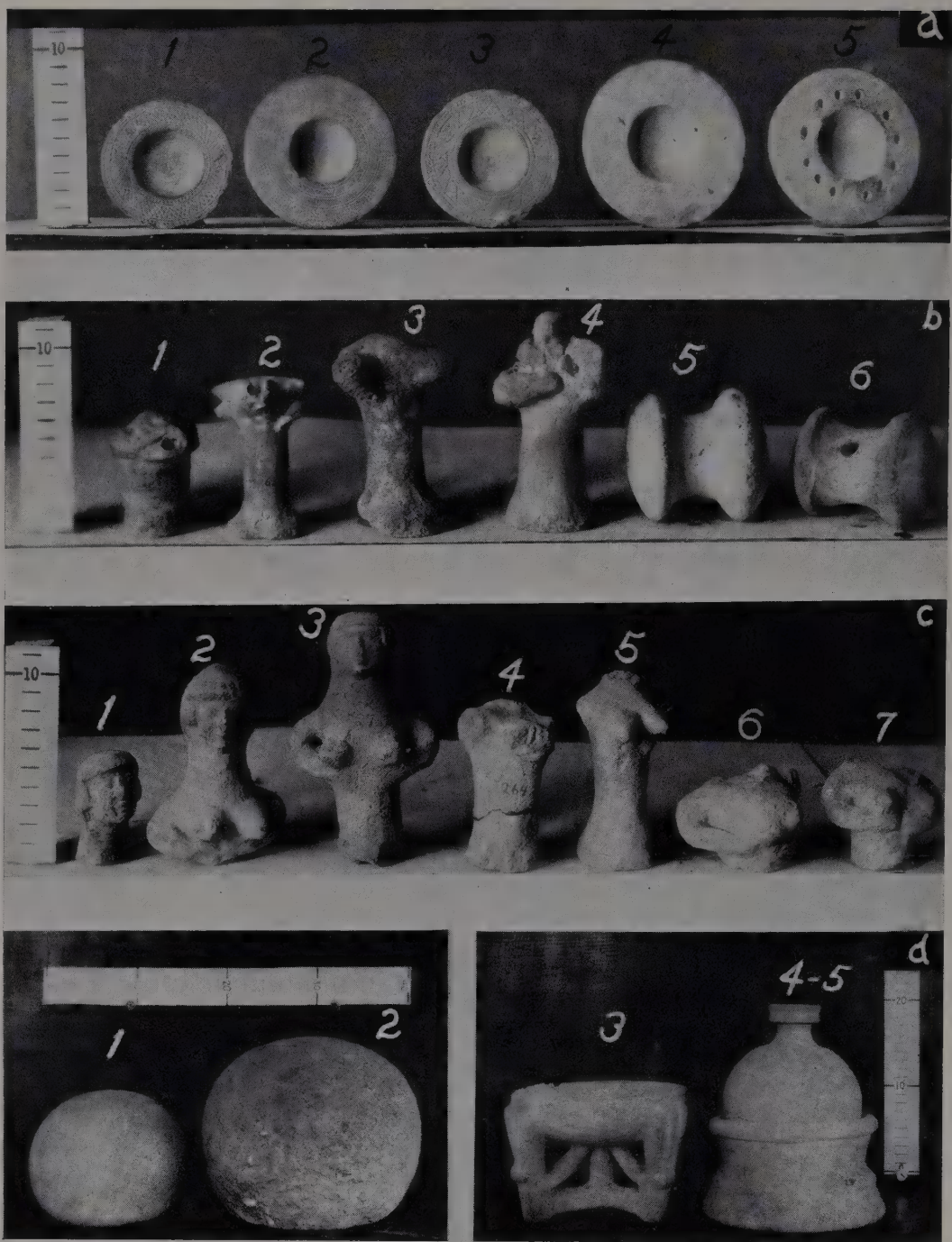
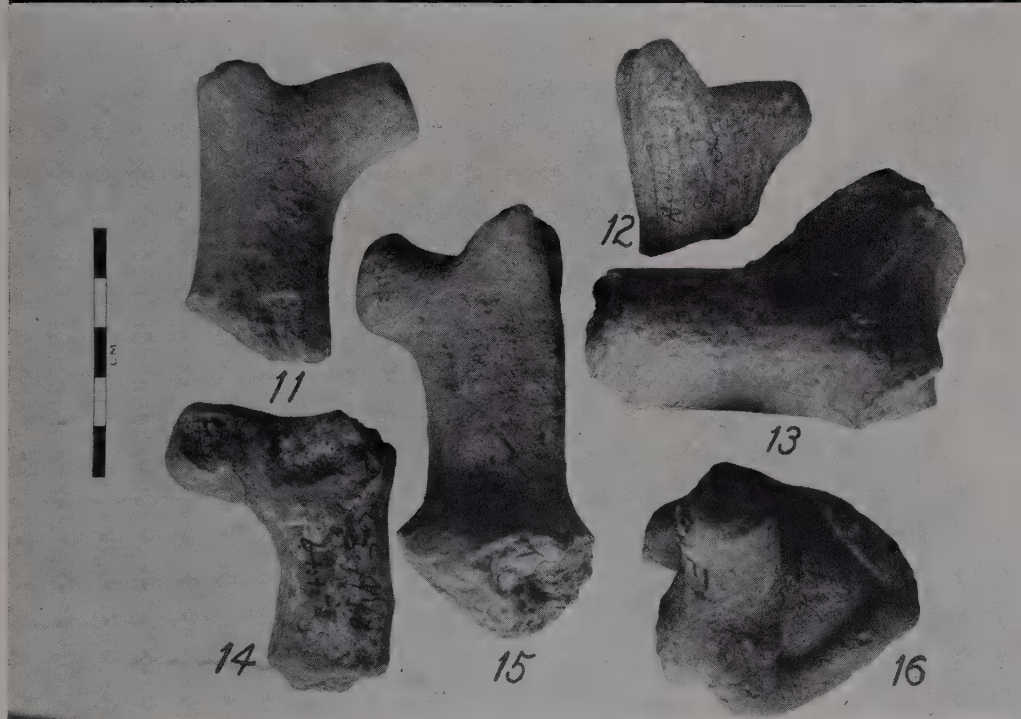
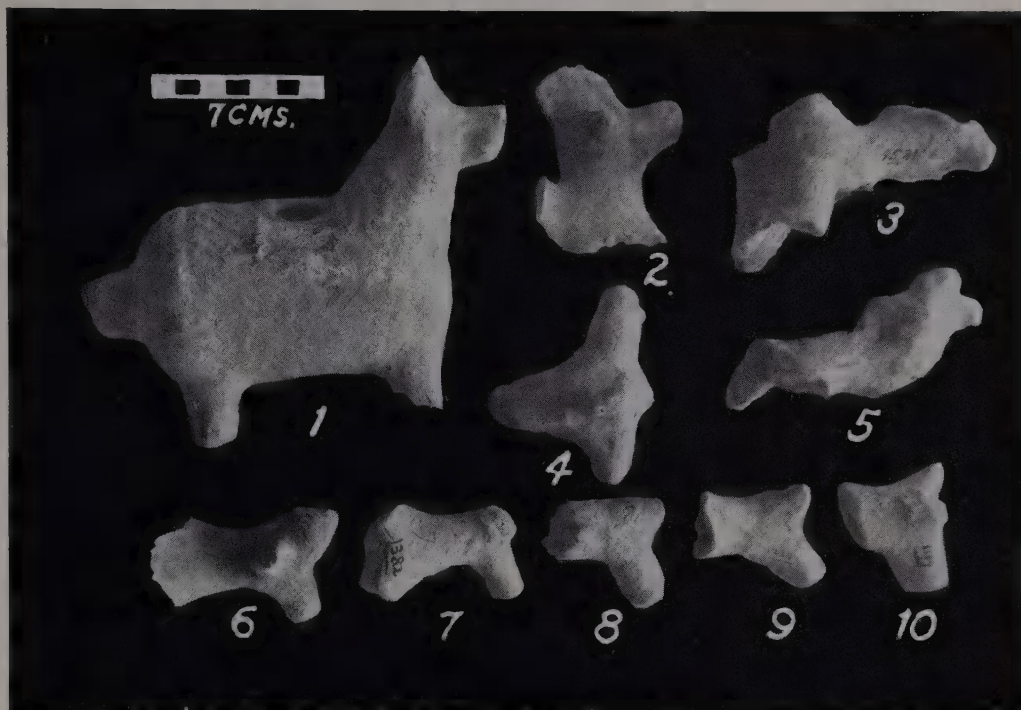


PLATE 57

Miscellaneous objects from stratum A (1926-1928).



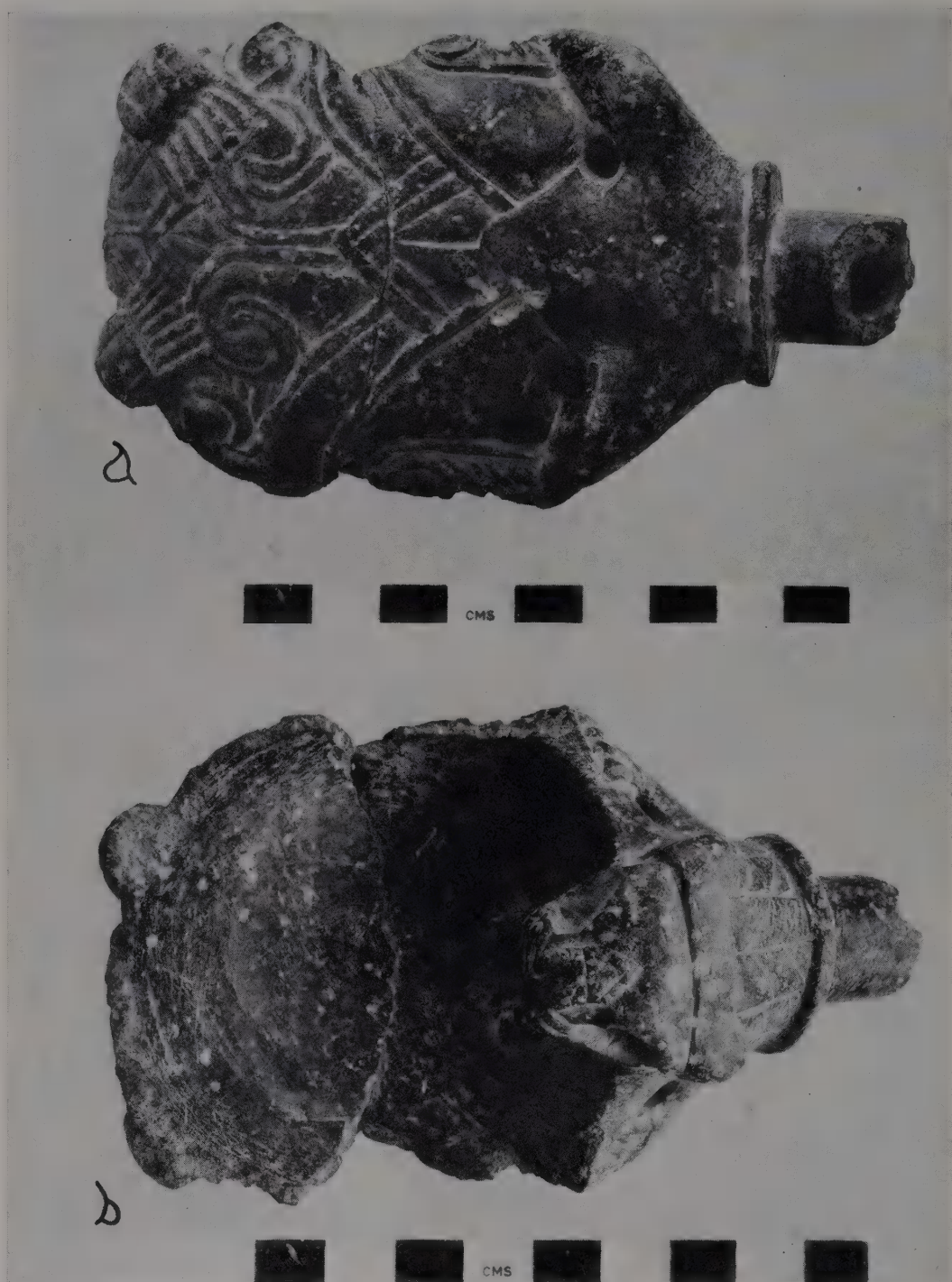


PLATE 59

Cult-object from stratum A (1932).

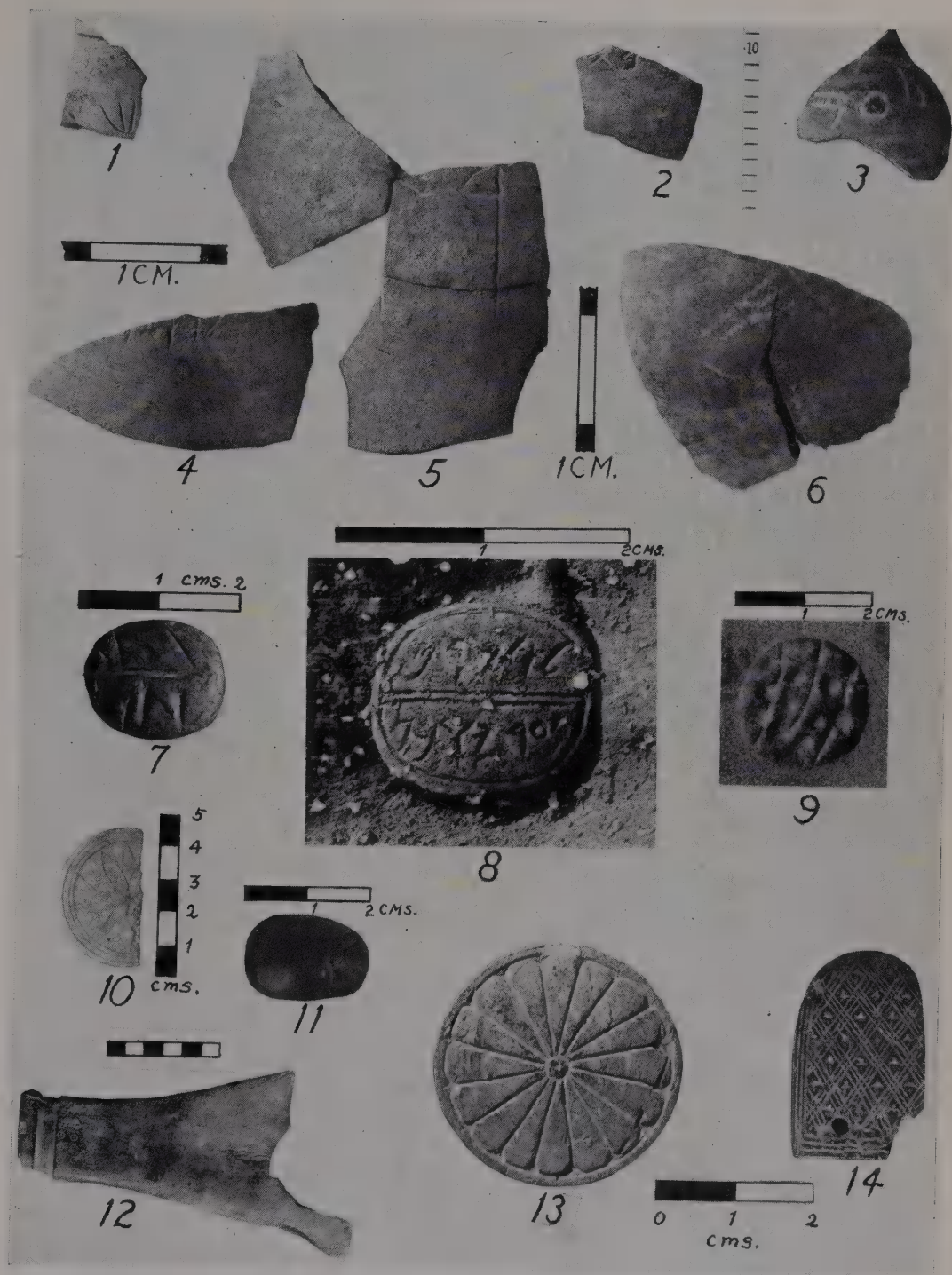


PLATE 60 Miscellaneous objects, all A except Nos. 1 (B), 7 (B?), 9 (B?), 10 and 13 (both B?).

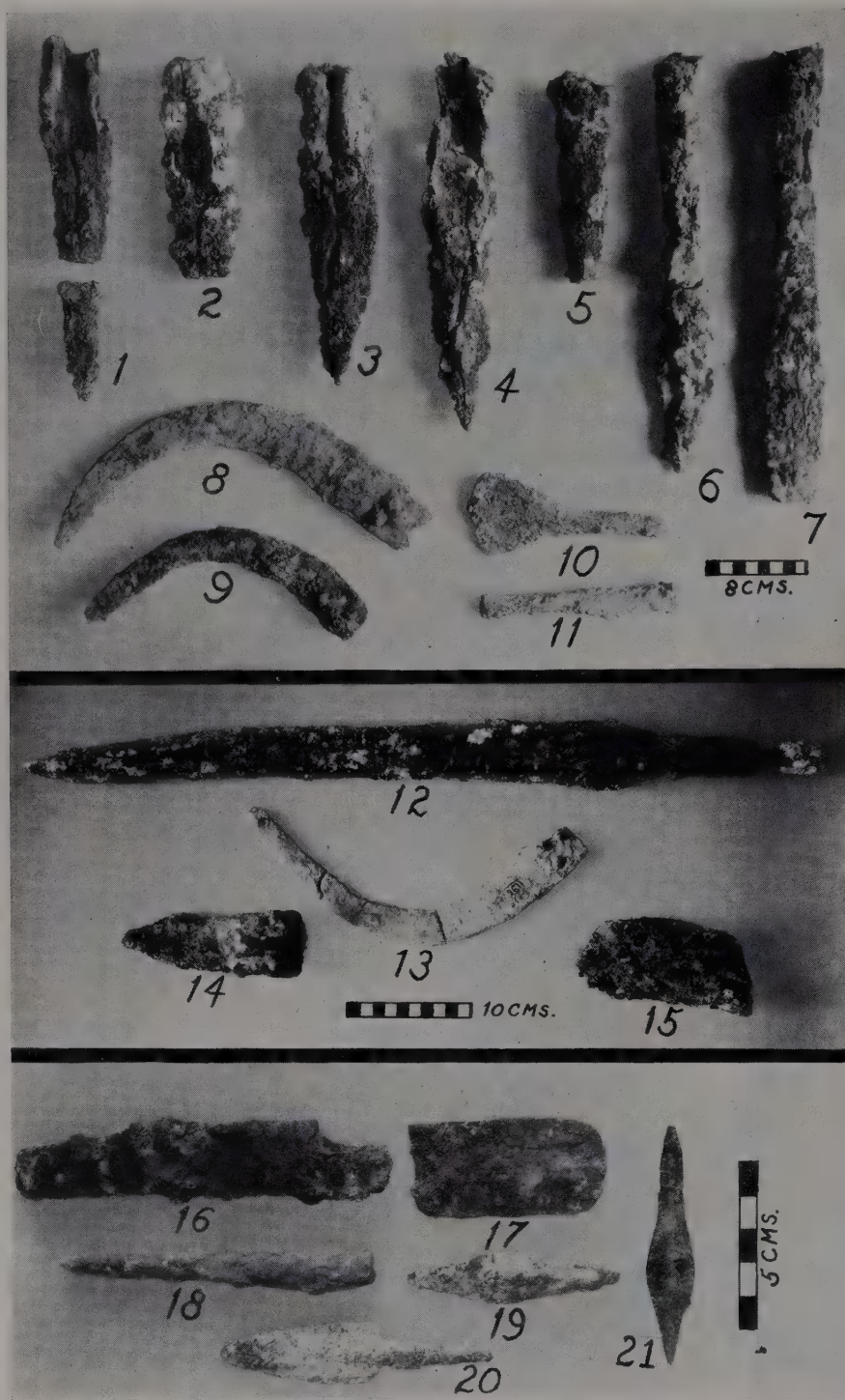


PLATE 61

Metal objects from stratum A (1928-1930).
(Nos. 18, 19, 21 are copper.)

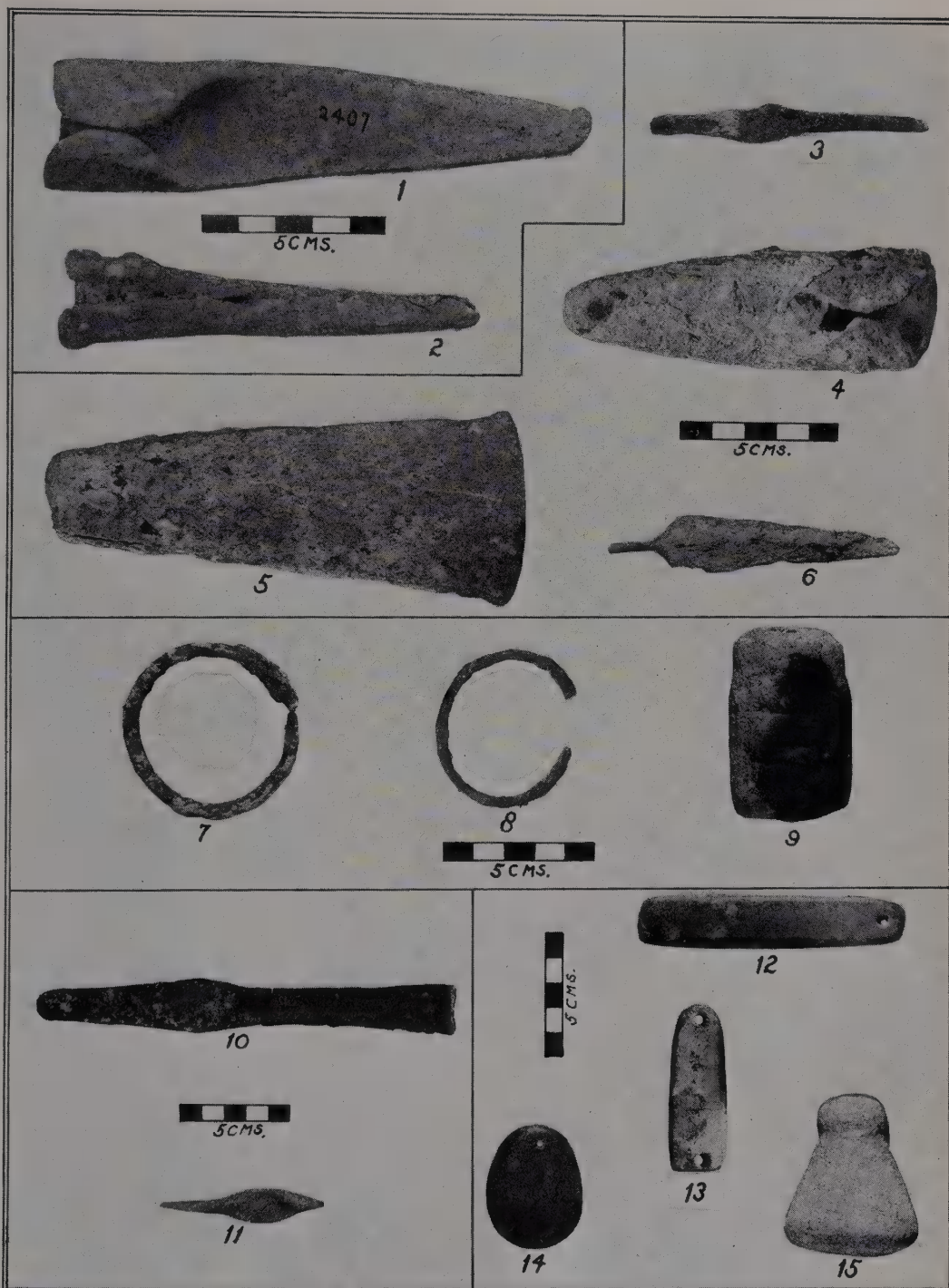


PLATE 62

Copper (or bronze) and stone objects from the Iron Age (1928-1930).
(Mainly from B.)

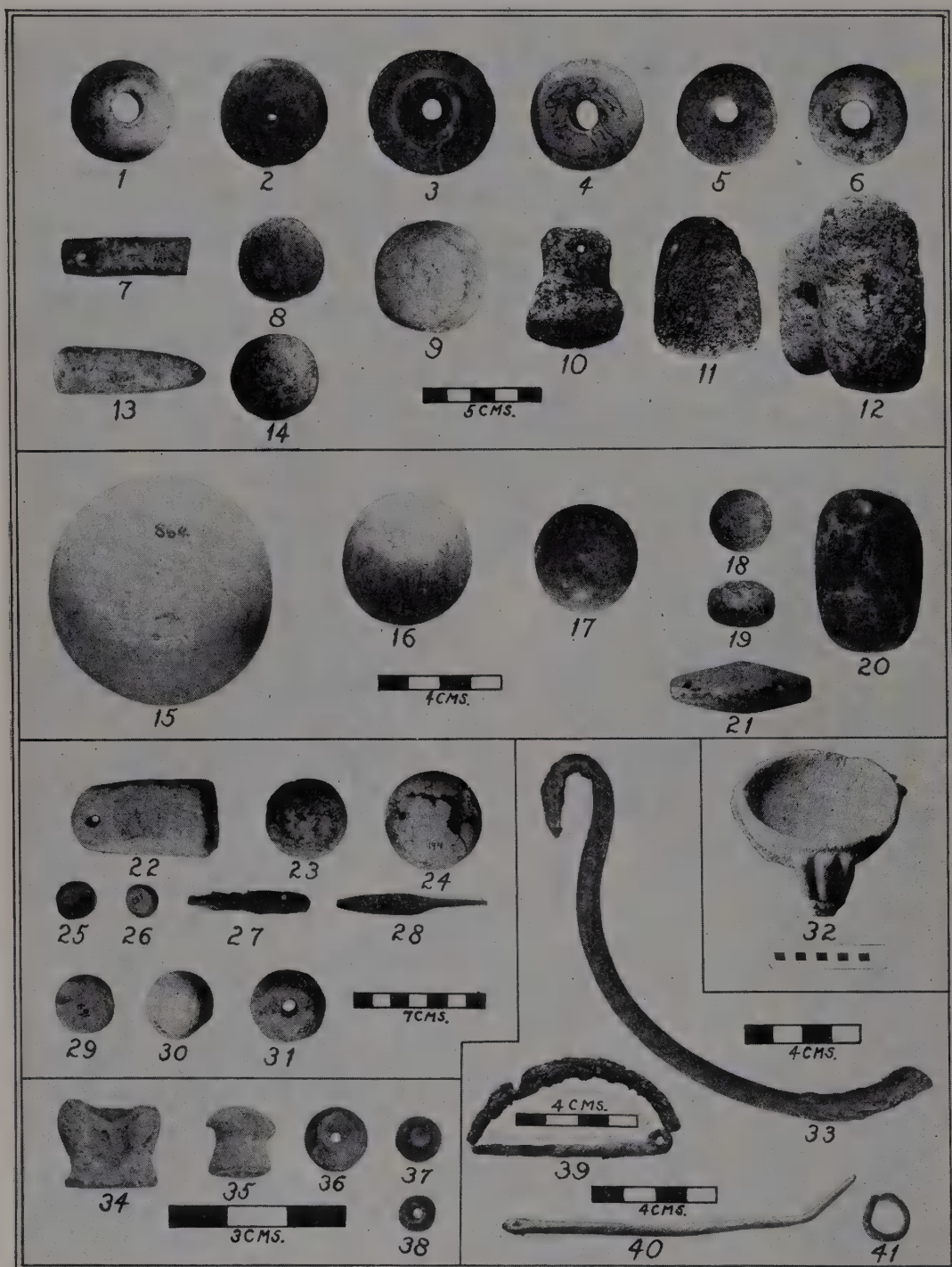
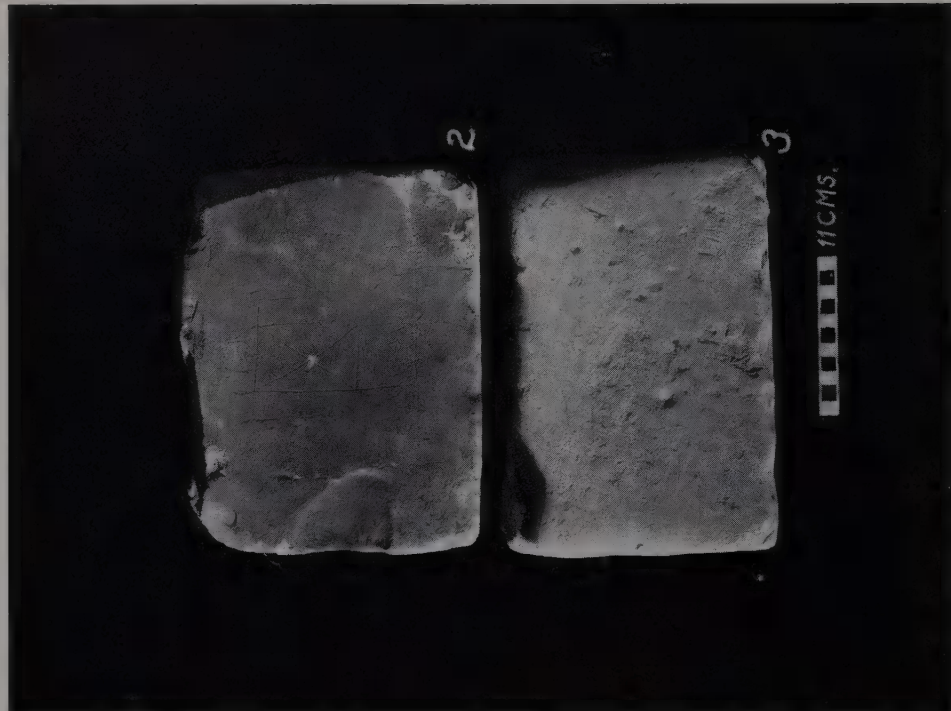
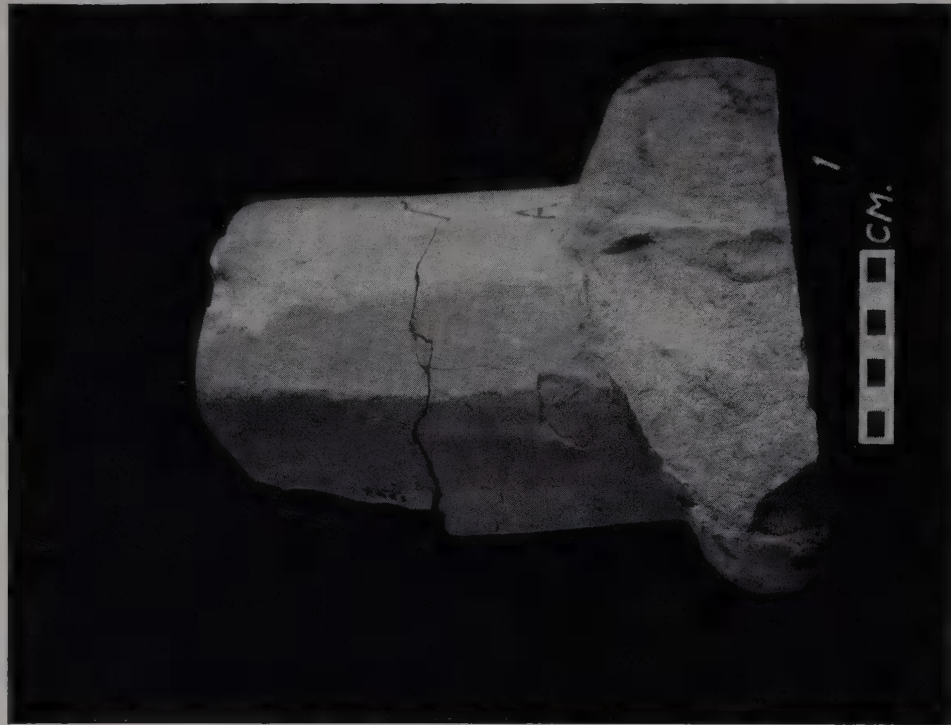


PLATE 63

Miscellaneous stone and metal objects mostly from the Iron Age (1926-1932).
(No. 1 is C; 7 is H; 29 is C; 21, 36-38 are M.B.)



PLATE 64 Miscellaneous objects in bone, copper and stone from the Iron Age (1926-1932).



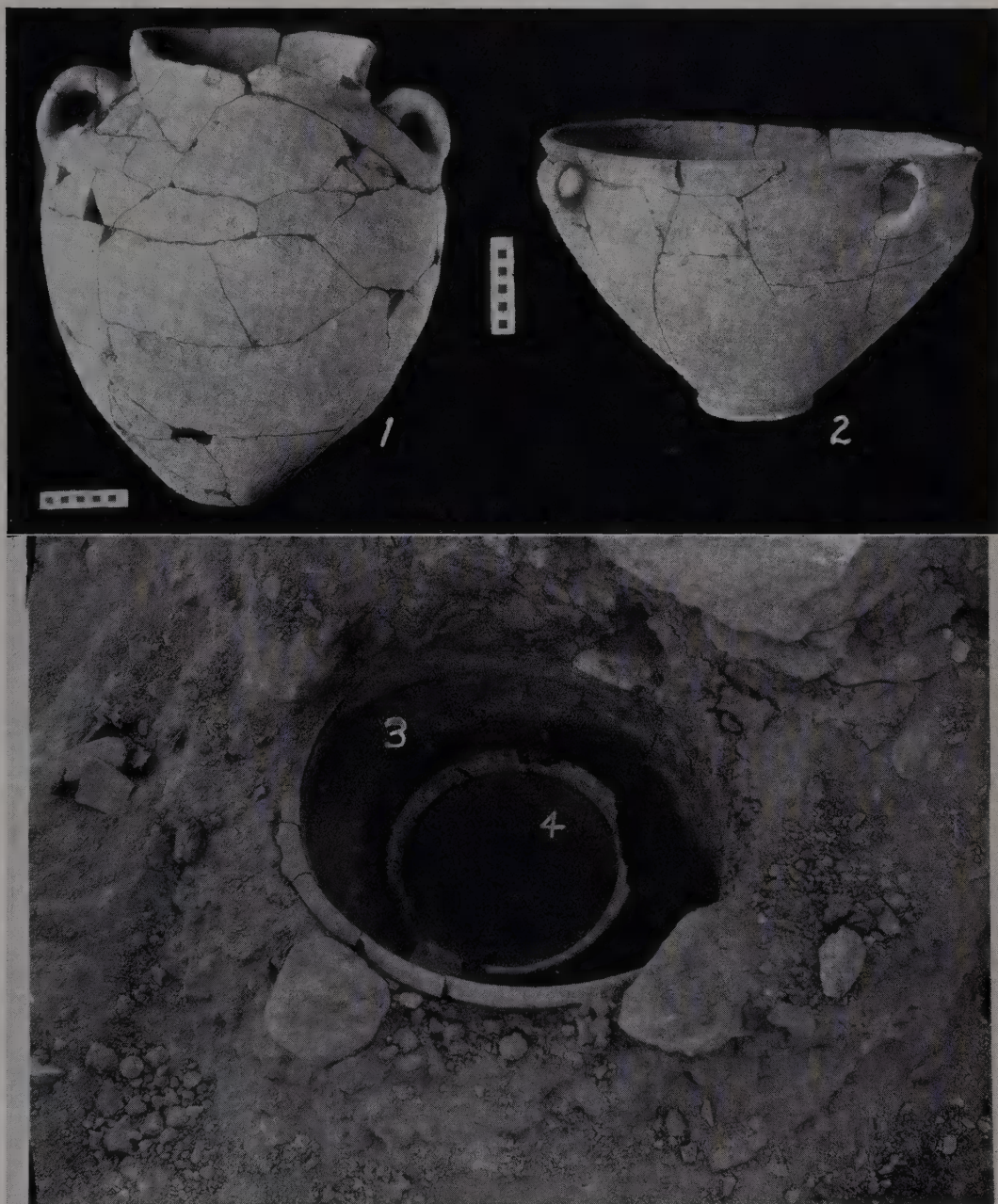


PLATE 66

Pottery from B (No. 1) and C (Nos. 2-4). 1932.

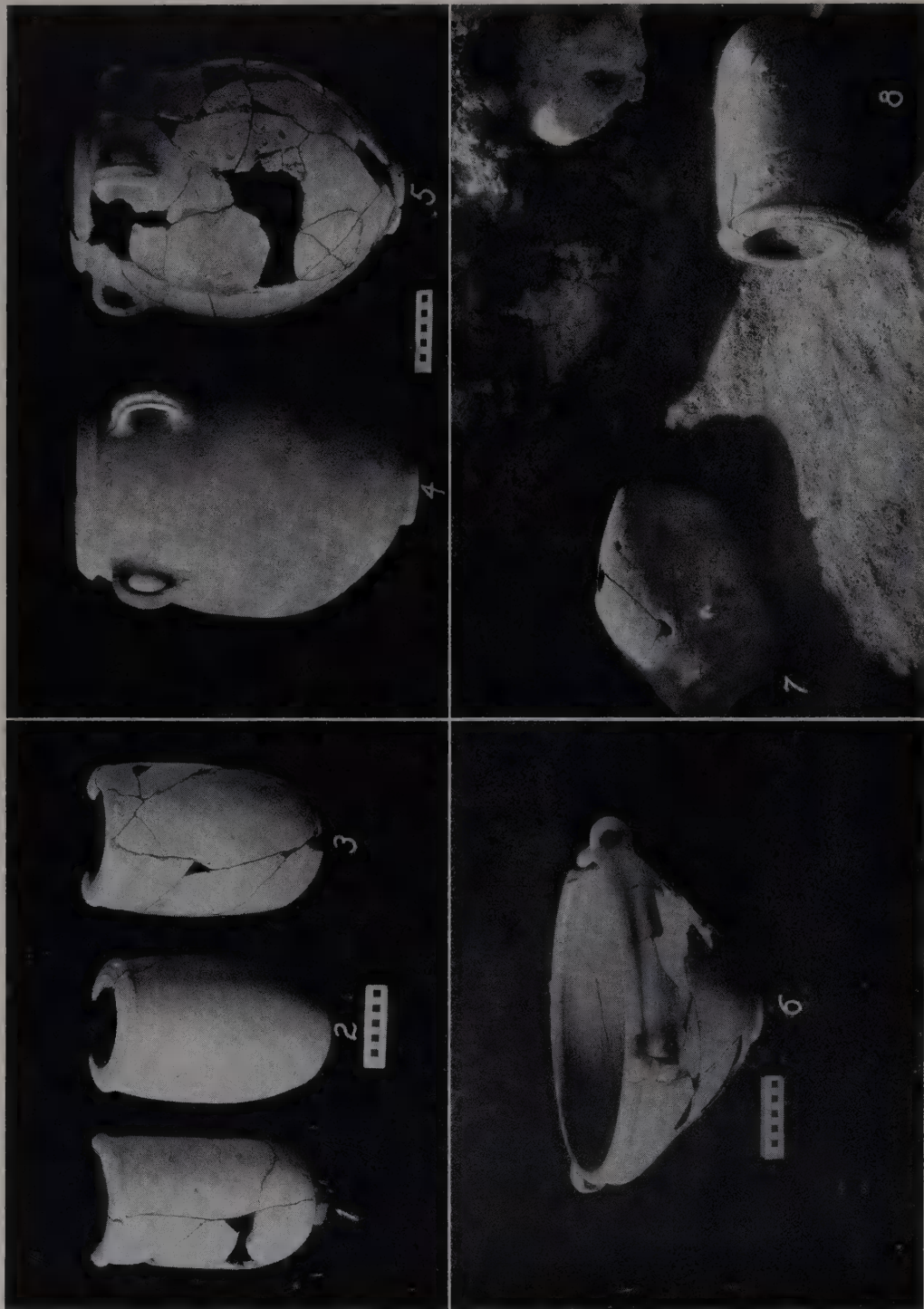


PLATE 67

Large vases from A (1930-1932). Nos. 7-8 are in situ, SE 13 A-6.

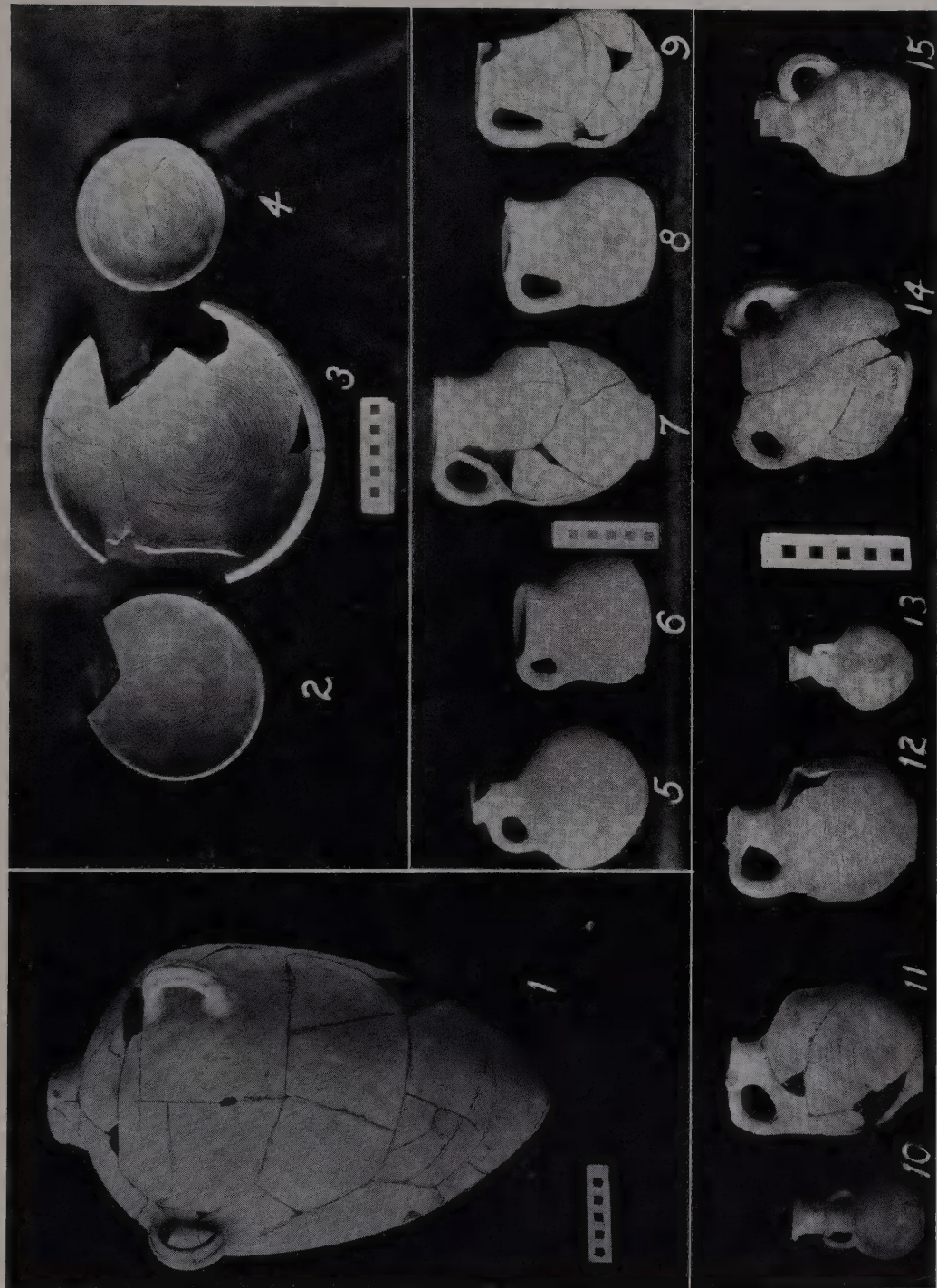
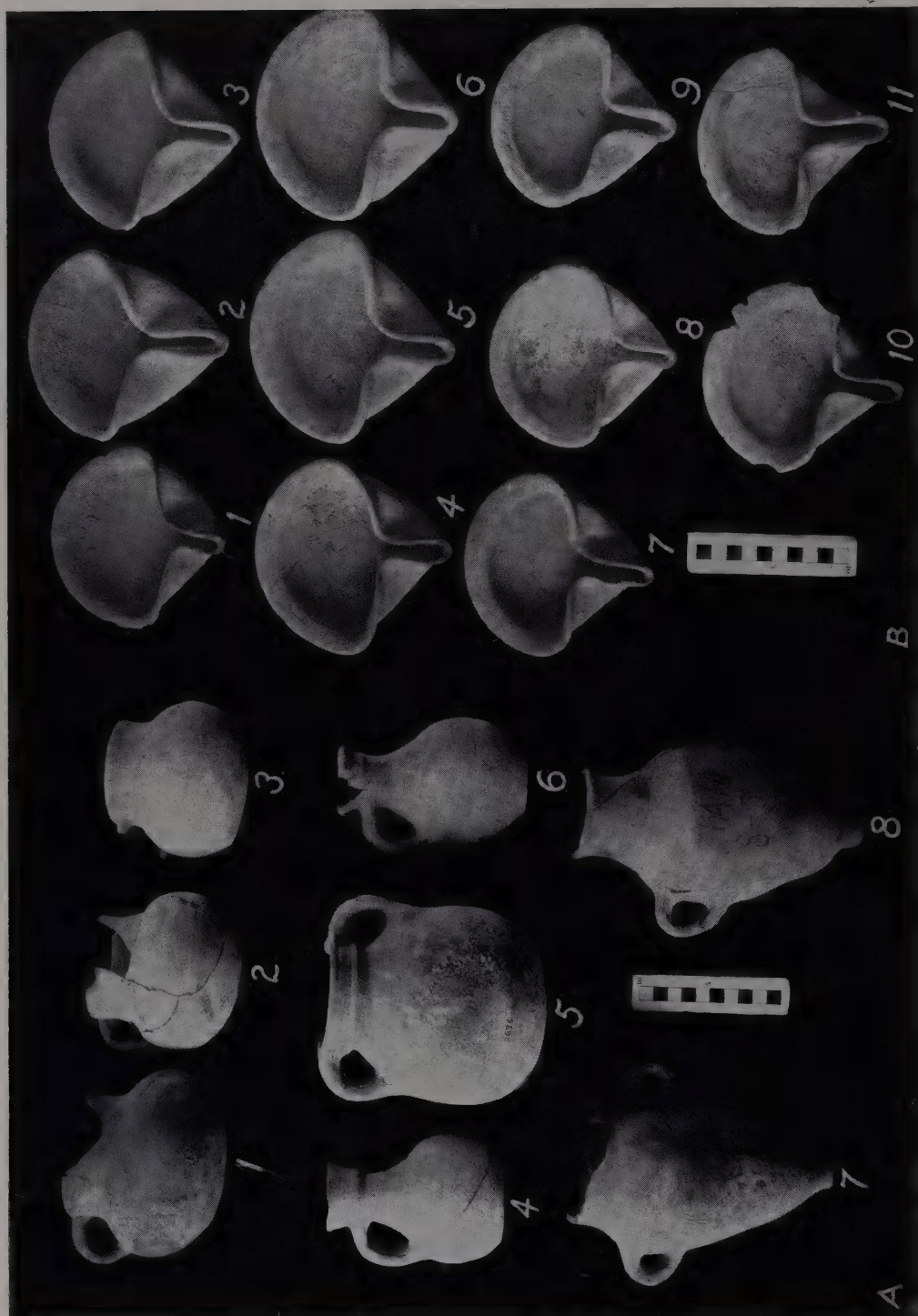
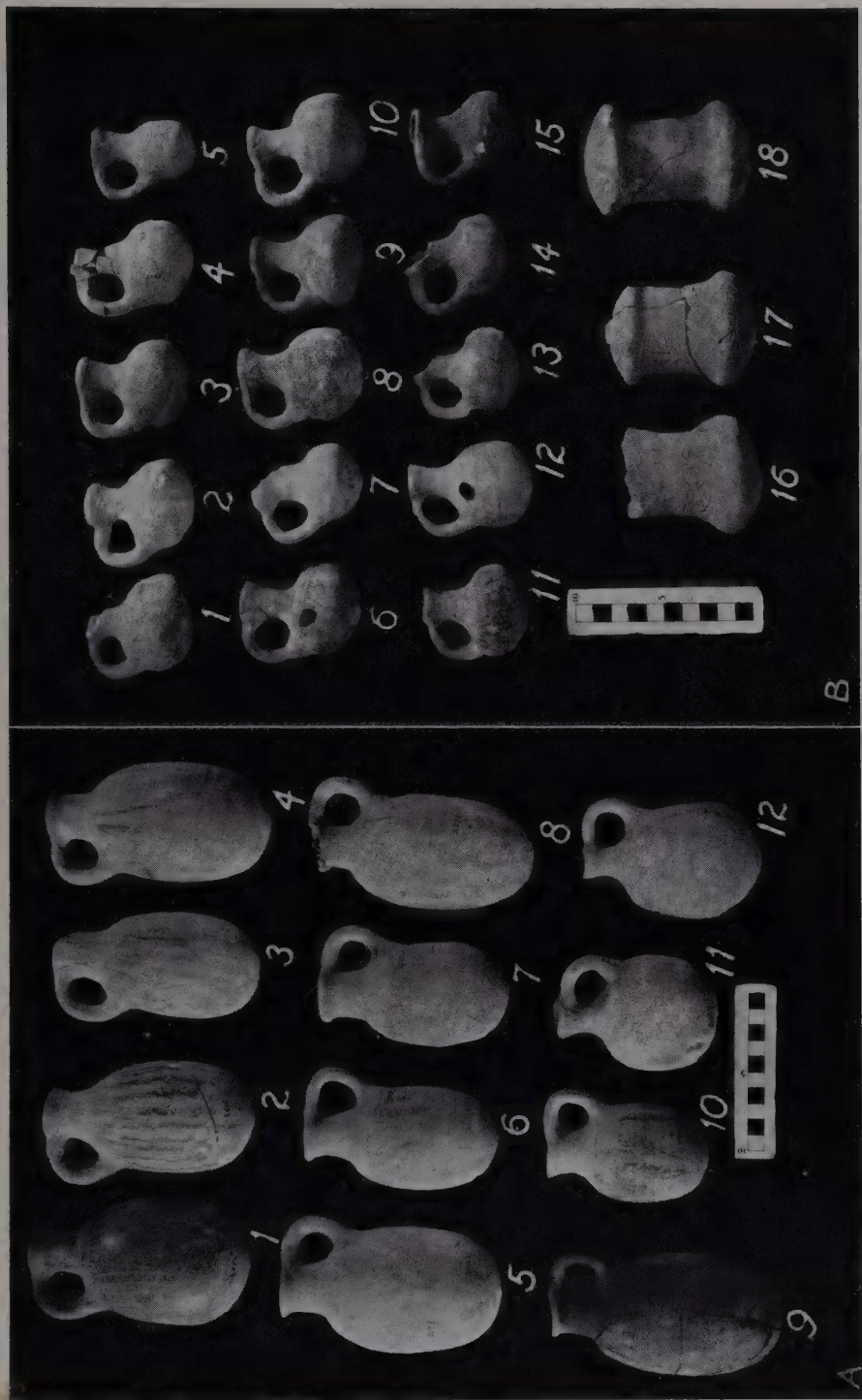


PLATE 68

Miscellaneous vases from A (1932).





Juglets from stratum A (1932).

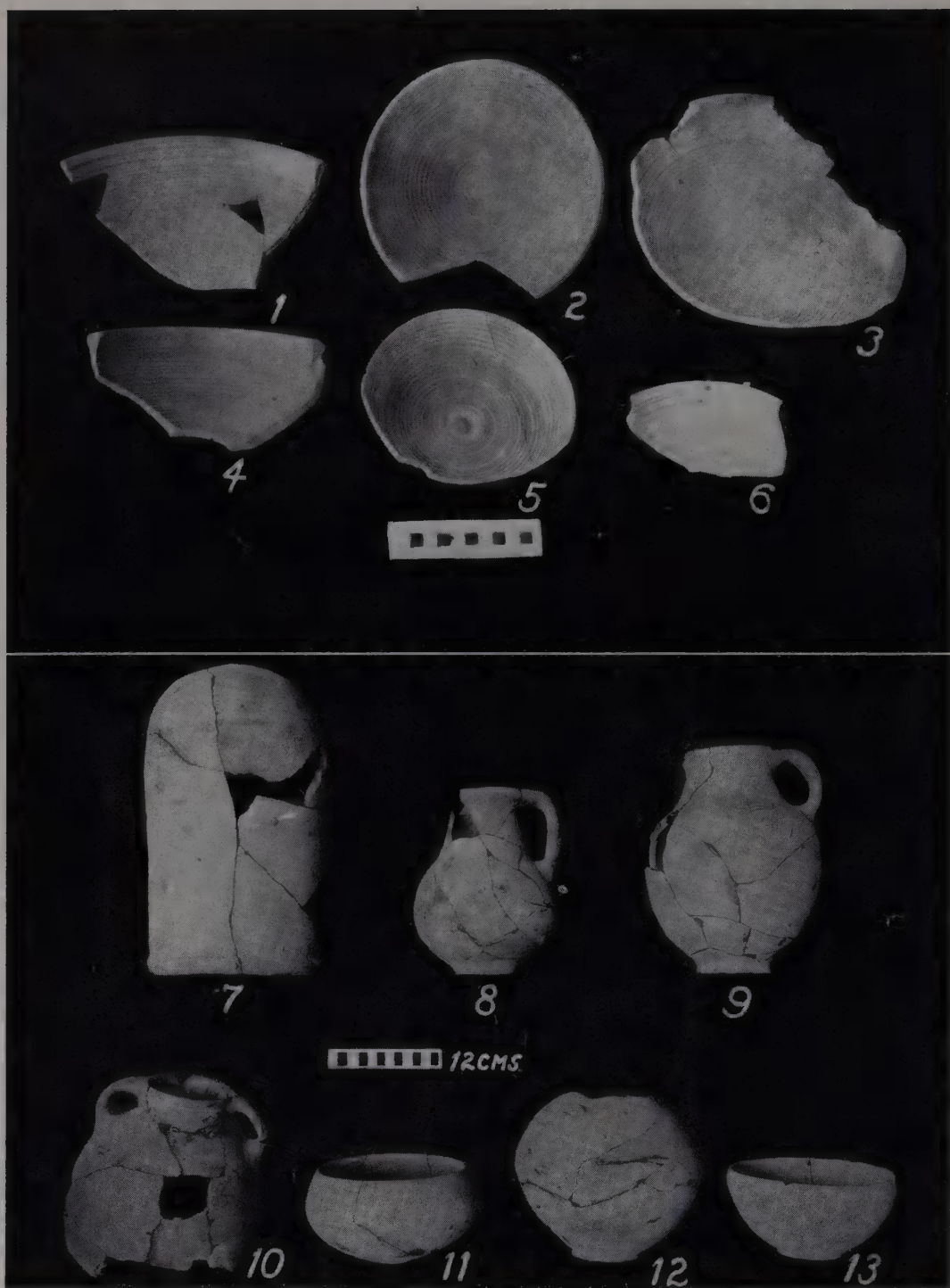
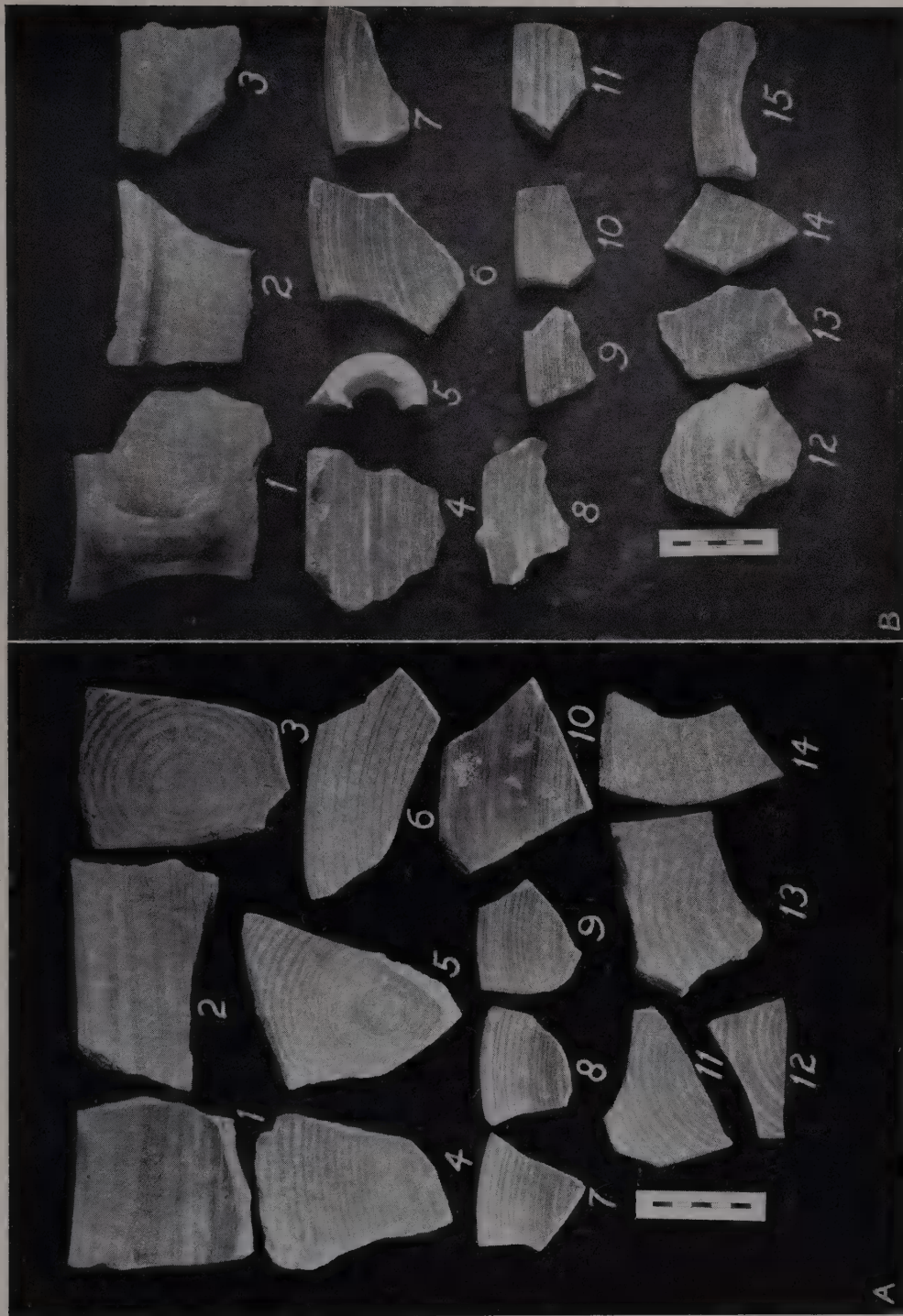
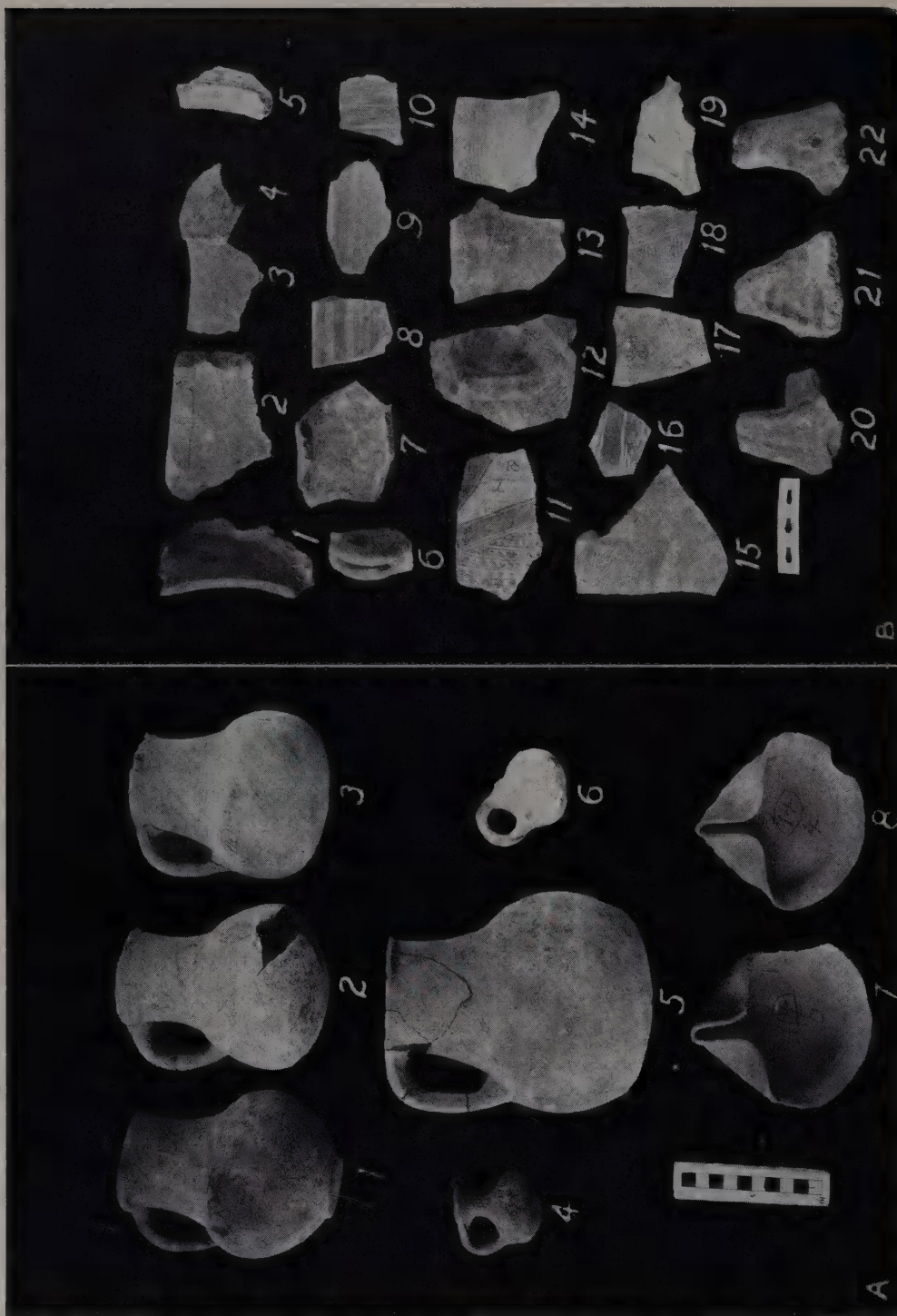


PLATE 71

Pottery from stratum A (1932).
(Nos. 12-13 are probably from C.)



A. Sherds from stratum A₂, eighth-sixth centuries (1932).
 B. Sherds from stratum A₁, tenth-eighth centuries (1932).



A. Pottery from Israelite tomb at Záheryeh (1932).
 B. Characteristic sherds from soundings at Záheryeh (1932).

Long-room bay §10

Looms + pillars, §35

Piper wrong on search
1574

Pillars + looms f35

112218

8

American

The annual. v.21,22

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N.B.

Ch. I for chronol. of pot'y types

